#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.07.96 Test oil : ISO 4113

: 0 460 484 105 Pump designation: VE4/8F2200R574-2

Customer-spec. information Customer : SEAT

: 1.9L SD Klima Motor

Power KW 47.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +: 0.05

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

Tolerance bar +:

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

# REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,9 Outlet

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting man Tolerance mm +: 0.2 Shutoff solenoid

12 Volt

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

5.9 pressure bar Tolerance bar + : 0.3

Shutoff solenoid

Volt 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 33.5

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 525

Del. quantity

cm3/1000 strokes : 7.0

Tolerance

cm3/1000 str. +-: 1.0

Shutoff solenoid

Volt 12

### IDLE DELIVERY

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 9.5

Tolerance

cm3/1000 str. + : 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid Volt 12

	+	Tolerance mm + : 0.4
HIGH IDLE SETTING	1	Shutoff solenoid Volt : 12
Rated speed rpm :	: 500	
Del. quantity cm3/1000 strokes : Tolerance	9.5	Timing device solenoid Volt : 100
cm3/1000 str. + : Shutoff solenoid	: 1.0	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt :	: 12	Rated speed rpm : 2000 Supply pomp
FULL-LOAD SPEED REG	SULATION +	pressure bar : 8.0
Rated speed rpm :	: 2525	Tolerance bar + : 0.3 Shutoff solenoid
Del. quantity cm3/1000 strokes :	: 10.5	Volt : 12
Tolerance cm3/1000 str. +-:	+	Rated speed rpm : 750 Supply pomp
Shutoff solenoid	·	pressure bar : 4.3
Volt :	: 12	Tolerance bar +-: 0.3 Shutoff solenoid
STARTING FUEL DELIV	/ERY	Volt : 12
Rated speed rpm : Del. quantity	: 100	OVERFLOW QUANTITY
cm3/1000 strokes : Tolerance	: 53.0	Rated speed rpm : 2200 Overflow quantity
cm3/1000 str. + : Shutoff solenoid	: 13.0	ccm/10s : 97.2 Tolerance
Volt :	: 12	ccm/10s +-: 41.6
	1	Check tolerance
	Ī	ccm/10s + : 41.6
	<u> </u>	Shutoff solenoid
INJECTION-PUMP TEST	F SPECIFICATIONS	Volt : 12
INJECTION-FUMP TEST	+ SPECIFICATIONS	Rated speed rpm : 750
TINING NEUTCE CHARL		
TIMING DEVICE CHARA	ACTERISTIC	Overflow quantity
Rated speed rpm :	+	Overflow quantity ccm/10s : 63.8 Tolerance
Rated speed rpm :	: 2000	Overflow quantity ccm/10s : 63.8
	: 2000	Overflow quantity ccm/10s : 63.8 Tolerance
Rated speed rpm :  SV travel mm : Tolerance mm + : Check	: 2000 : 7.9 : 0.4	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2 Check tolerance ccm/10s + : 22.2
Rated speed rpm :  SV travel mm : Tolerance mm + : Check tolerance mm + :	: 2000 : 7.9 : 0.4	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid
Rated speed rpm :  SV travel mm : Tolerance mm + : Check	: 2000 : 7.9 : 0.4	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2 Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 12
Rated speed rpm :  SV travel mm : Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt :	: 2000 : 7.9 : 0.4 : 0.7 : 12	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid
Rated speed rpm  SV travel mm Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt  Rated speed rpm :	: 2000 : 7.9 : 0.4 : 0.7 : 12 : 750	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2525
Rated speed rpm  SV travel mm  Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm + :	: 2000 : 7.9 : 0.4 : 0.7 : 12 : 750 : 3.5	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTI  Rated speed rpm : 2525 Del. quantity cm3/1000 strokes : 10.5
Rated speed rpm  SV travel mm Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm + : Check tolerance mm + :	: 2000 : 7.9 : 0.4 : 0.7 : 12 : 750 : 3.5 : 0.4	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2525 Del. quantity cm3/1000 strokes : 10.5 Tolerance cm3/1000 str. + : 2.0
Rated speed rpm  SV travel mm Tolerance mm + 3 Check tolerance mm + 3 Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm + 3 Check tolerance mm + 3 Shutoff solenoid	: 2000 : 7.9 : 0.4 : 0.7 : 12 : 750 : 3.5 : 0.4	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2525 Del. quantity cm3/1000 strokes : 10.5 Tolerance cm3/1000 str. + : 2.0 Check tolerance cm3/1000s. + : 4.0
Rated speed rpm  SV travel mm  Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt  Rated speed rpm  SV travel mm  Tolerance mm + : Check tolerance mm + : Shutoff solenoid	: 2000 : 7.9 : 0.4 : 0.7 : 12 : 750 : 3.5 : 0.4 : 0.7 : 12	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2525 Del. quantity cm3/1000 strokes : 10.5 Tolerance cm3/1000 str. + : 2.0 Check tolerance
Rated speed rpm  SV travel mm Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt  Rated speed rpm	: 2000 : 7.9 : 0.4 : 0.7 : 12 : 750 : 3.5 : 0.4 : 0.7 : 12	Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTI  Rated speed rpm : 2525 Del. quantity cm3/1000 strokes : 10.5 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid

cm3/1000 strokes : 27.0         cm3/1000 st. + : 2.2           Tolerance cm3/1000s str. + : 5.0         cm3/1000s + : 12           Check tolerance cm3/1000s + : 6.0         shutoff solenoid           Shutoff solenoid         leEctr. Shutoff solenoid           Volt         : 12           Rated speed rpm : 2675         Rated speed rpm : 450           Del. quantity cm3/1000 strokes : 1.5         Tolerance cm3/1000 str. + : 1.5           Check tolerance cm3/1000s trokes : 1.5         Tolerance cm3/1000 str. + : 1.5           Rated speed rpm : 2000 pel. quantity cm3/1000 strokes : 35.0         cm3/1000 str. + : 1.5           Rated speed rpm : 2000 pel. quantity cm3/1000 strokes : 35.0         rm3/1000 str. + : 1.0           Romal solenoid volt : 12         pel. quantity cm3/1000 strokes : 1.5           Romal solenoid volt : 12         rm3/1000 str. + : 1.5           Rated speed rpm : 400 pel. quantity cm3/1000 strokes : 37.5         rm3/1000 strokes : 5.0           Rated speed rpm : 400 pel. quantity cm3/1000 strokes : 37.5         rm3/1000 str. + : 1.5           Romal speed rpm : 400 pel. quantity cm3/1000 strokes : 37.5         rm3/1000 strokes : 5.0           Romal speed rpm : 400 pel. quantity cm3/1000 strokes : 37.5         rm3/1000 strokes : 5.0           Romal speed rpm : 1250 pel. quantity cm3/1000 strokes : 37.5         rm3/1000 strokes : 5.0           Romal speed rpm : 1250 pel. quantity cm3/1000 str	Del. quantity		+ Check tolerance
Tolerance	cm3/1000 strokes	· 27 በ	
cm3/1000 str. +: 5.0         5.0           Check tolerance         cm3/1000S.         +: 6.0           Shutoff solenoid         12         ELECTR. SHUTOFF           Volt         : 12         CONTROL LEVER, IDLE STOP           Rated speed rpm         : 2675         Rated speed rpm: 450           Del. quantity         cm3/1000 strokes: 1.5         Tolerance           cm3/1000 str. +: 1.5         Tolerance         cm3/1000 strokes: 1.5           cm3/1000S. +: 1.5         Check tolerance         cm3/1000 str. +: 1.5           cm3/1000 strokes: 35.0         Check tolerance         cm3/1000 strokes: 5.0           Rated speed rpm: 2200         FULL-LOAD STOP CONTROL LEVER           pel. quantity         cm3/1000 strokes: 5.0           Tolerance         cm3/1000 strokes: 1.5           cm3/1000 strokes: 35.0         Rated speed rpm: 450           Del. quantity         cm3/1000 strokes: 1.5           cm3/1000 strokes: 37.5         Tolerance           cm3/1000 strokes: 37.5         Spread           cm3/1000 strokes: 37.5         Spread           cm3/1000 strokes: 37.5         Spread           cm3/1000 strokes: 5.5         Shutoff solenoid           Volt         12           Rated speed rpm: 750         Read speed rpm: 180 </th <th></th> <td></td> <td></td>			
Check tolerance cn3/1000 strokes : 1.5 Rated speed rpm : 2675 Pated speed rpm : 2675 Rated speed rpm : 2675 Pated speed rpm : 2675 Pated speed rpm : 2675 Pated speed rpm : 450 Pated speed rpm : 4.5 Check tolerance cn3/1000 strokes : 1.5 Rated speed rpm : 2200 Pated speed rpm : 2500 Pated speed rpm : 2500 Pated speed rpm : 2500 Pated speed rpm : 450 Pated speed rpm : 1250 Pated speed rpm : 1250 Pated speed rpm : 750 Pated speed rpm : 1250 Pated sp		. 50	
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Cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2200 Del. quantity cm3/1000 str. + : 1.0 Check tolerance cm3/1000 strokes : 5.0  Rated speed rpm : 250 Del. quantity cm3/1000 str. + : 1.0 Check tolerance cm3/1000 strokes : 35.0 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 37.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -3.3 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : 57.0 Tolerance cm3/1000 strokes : 5.0  Assembly AND ADJUSTMENT DIMENSIONS Shutoff solenoid Volt : 12  Pimension K mm : 3,3 Tolerance mm + : +0.1 Dimension K mm : 5,7 Tolerance mm + : +0.2 Dimension K mm : 7,3 Tolerance mm + : +0.2	***	; 1.5	+ Del. quantity
Check tolerance cm3/1000s. +: 1.5		. 45	
cm3/1000S.       —:       1.5         Shutoff solenoid Volt       :       12         Rated speed rpm       :       2200         Del. quantity       FULL-LOAD STOP CONTROL LEVER         cm3/1000 strokes       :       5.0         Tolerance cm3/1000 strokes       :       35.0         Tolerance cm3/1000 str.       —:       1.0         Check tolerance cm3/1000S.       —:       2.2         Shutoff solenoid Volt       :       12         Rated speed rpm       :       400       —:         Del. quantity       —:       1.5         cm3/1000 strokes       :       5.0         Check tolerance cm3/1000 strokes       :       5.0         cm3/1000 strokes       :       5.0         Check tolerance cm3/1000 strokes       :       5.0         cm3/1000 strokes       :       3.0         Check tolerance cm3/1000 strokes       :       5.5         Shutoff solenoid Volt       :       12         Volt       :       12         Rated speed rpm       :       180         Del. quantity cm3/1000 strokes       :       3.0         Shutoff solenoid Volt       :       1.5		: 1.5	
Shutoff solenoid   Volt		4 -	
Note   12		: 1.5	
Rated speed rpm : 2200  Del. quantity cm3/1000 strokes : 35.0  Tolerance cm3/1000 str. +: 1.0  Check tolerance cm3/1000 strokes : 2.2  Shutoff solenoid Volt : 12  Rated speed rpm : 400  Del. quantity cm3/1000 strokes : 37.5  Tolerance cm3/1000 strokes : 5.0  Rated speed rpm : 400  Del. quantity cm3/1000 strokes : 37.5  Tolerance cm3/1000 strokes : 5.5  Shutoff solenoid Volt : 12  Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : -3.3  Shutoff solenoid Volt : 12  Rated speed rpm : 750  Del. quantity cm3/1000 strokes : 34.0  Tolerance cm3/1000 strokes : 57.0  Toler		40	
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cm3/1000 strokes       : 35.0         Tolerance cm3/1000 str.       +: 1.0       bet. quantity         cm3/1000s       +: 2.2       Tolerance cm3/1000 strokes       : 1.5         cm3/1000 strokes       : 1.5       Tolerance cm3/1000 strokes       : 5.0         cm3/1000 strokes       : 37.5       Spread cm3/1000 strokes       : 5.0         cm3/1000 strokes       : 37.5       Spread cm3/1000s.       +: 1.5         cm3/1000 strokes       : 37.5       Spread cm3/1000s.       +: 1.5         cm3/1000 strokes       : 37.5       Spread cm3/1000s.       +: 1.5         cm3/1000 strokes       : 3.0       +: 3.0		: 2200	THE LAKE STOP COLUMN
Tolerance cm3/1000 str. +: 1.0	pel. quantity		† FULL-LOAD STOP CONTROL LEVER
cm3/1000 str. +: 1.0       Del. quantity         check tolerance       cm3/1000 strokes : 1.5         cm3/1000 strokes : 12       cm3/1000 strokes : 5.0         Rated speed rpm : 400       Check tolerance         Del. quantity       cm3/1000 strokes : 5.0         Check tolerance       cm3/1000 strokes : 5.0         Check tolerance       cm3/1000 strokes : 5.0         cm3/1000 strokes : 3.0       cm3/1000 strokes : 5.0         Check tolerance       cm3/1000 strokes : 5.0         cm3/1000 strokes : 3.0       cm3/1000 strokes : 5.0         Shutoff solenoid       strokes : 5.0         Volt : 12       Rated speed rpm : 180         Del. quantity       cm3/1000 strokes : 57.0         Tolerance       cm3/1000 strokes : 57.0         Tolerance mm + : 40,1       pimensi		: 35.0	† <b>.</b>
Check tolerance cm3/1000s. +: 2.2			
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Shutoff solenoid			
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Rated speed rpm : 400  Pel. quantity cm3/1000 strokes : 37.5  Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. +: 5.5 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Pel. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : 35.0  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 35.7 Tolerance mm +: +0,1 Dimension K mm : 3,3 Tolerance mm +: +0,2 Dimension MS mm : 1,3 Tolerance mm +: +0,2			
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Check tolerance cm3/1000s. +: 5.5 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -3.3 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  Dimension K mm : 3,3 Tolerance mm +: +0,1 Dimension KF mm : 5,7 Del. quantity cm3/1000 strokes : 33.5 Tolerance mm +: +0,2 Dimension MS mm : 1,3 Tolerance mm +: +0,2			+ cm3/1000 strokes : 5.0
Cm3/1000s. +: 5.5 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -3.3 Shutoff solenoid Volt : 12  Rated speed rpm : 750  Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  Pimension K mm : 3,3 Tolerance mm +: +0,1 Dimension KF mm : 5,7 Del. quantity cm3/1000 strokes : 33.5 Tolerance mm +: +0,2 Dimension MS mm : 1,3 Tolerance mm +: +0,2		: 3.0	†
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Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : -3.3  Shutoff solenoid Volt : 12  Rated speed rpm : 750  Pated speed rpm : 750  Rated speed rpm : 750  Tolerance cm3/1000 strokes : 34.0  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Shutoff solenoid Volt : 3,3  Tolerance mm + : +0,1  Dimension K mm : 5,7  Del. quantity cm3/1000 strokes : 33.5  Tolerance mm + : +0,2  Dimension MS mm : 1,3  Tolerance mm + : +0,2		• •	†
Del. quantity cm3/1000 strokes : -3.3 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 57.0  Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Dimension K mm : 3,3 Tolerance mm +: +0,1 Dimension KF mm : 5,7 Del. quantity cm3/1000 strokes : 33.5 Tolerance mm +: +0,2 Dimension MS mm : 1,3 Tolerance mm +: +0,2	Volt	: 12	<del>;</del>
Del. quantity cm3/1000 strokes : -3.3 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 57.0  Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Dimension K mm : 3,3 Tolerance mm +: +0,1 Dimension KF mm : 5,7 Del. quantity cm3/1000 strokes : 33.5 Tolerance mm +: +0,2 Dimension MS mm : 1,3 Tolerance mm +: +0,2			†
cm3/1000 strokes : -3.3       Rated speed rpm : 180         Volt : 12       Del. quantity         cm3/1000 strokes : 57.0       Tolerance         Del. quantity       cm3/1000 str. + : 17.0         cm3/1000 strokes : 34.0       Shutoff solenoid         Tolerance       Volt : 12         Check tolerance       Cm3/1000 str. + : 3.0         Shutoff solenoid       ASSEMBLY AND ADJUSTMENT DIMENSIONS         Volt : 12       Dimension K mm : 3,3         Tolerance mm + : +0,1       Dimension KF mm : 5,7         Del. quantity       Tolerance mm + : +0,2         cm3/1000 strokes : 33.5       Dimension MS mm : 1,3         Tolerance mm + : +0,2       Tolerance mm + : +0,2		: 1250	†
Rated speed rpm : 180			†
Volt : 12		: -3.3	†
Rated speed rpm : 750		4.5	
Tolerance	Volt	: 12	
Del. quantity cm3/1000 strokes : 34.0  Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0  Shutoff solenoid Volt : 12  Dimension K mm : 3,3  Tolerance mm +: +0,1  Dimension KF mm : 5,7  Del. quantity cm3/1000 str. +: 17.0  Shutoff solenoid  Tolerance mm +: +0,1  Dimension KF mm : 5,7  Del. quantity cm3/1000 strokes : 33.5  Tolerance mm +: +0,2  Dimension MS mm : 1,3  Tolerance mm +: +0,2		emp par /m	
cm3/1000 strokes: 34.0  Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0  Shutoff solenoid Volt: 12  Dimension K mm: 3,3  Tolerance mm: +: +0,1  Dimension KF mm: 5,7  Del. quantity cm3/1000 strokes: 33.5  Tolerance mm: +: +0,2  Dimension MS mm: 1,3  Tolerance mm: +: +0,2  Dimension MS mm: 1,3  Tolerance mm: +: +0,2		: 750	
Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12 Dimension K mm : 3,3 Tolerance mm +: +0,1 Dimension KF mm : 5,7 Del. quantity cm3/1000 strokes : 33.5 Tolerance mm +: +0,2 Dimension MS mm : 1,3 Tolerance mm +: +0,2	Del. quantity	7/ 0	
cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 33.5 Tolerance Tolerance Tolerance mm + : +0,2 Dimension KF mm : 5,7 Del. quantity Tolerance mm + : +0,2 Dimension MS mm : 1,3 Tolerance mm + : +0,2		: 34.0	
Check tolerance cm3/1000s. +: 3.0  Shutoff solenoid Volt : 12  Parent speed rpm : 1250  Del. quantity cm3/1000 strokes : 33.5  Tolerance		. 45	+ volt : 12
cm3/1000s. +: 3.0  Shutoff solenoid  Volt : 12  Dimension K mm : 3,3  Tolerance mm +: +0,1  Dimension KF mm : 5,7  Del. quantity  cm3/1000 strokes : 33.5  Tolerance mm +: +0,2  Dimension MS mm : 1,3  Tolerance mm +: +0,2		; 1.5	†
Shutoff solenoid  Volt : 12		. 70	ACCEMBLY AND ADMINISTRATE DEMENDED ONC
Volt : 12		: 3.0	T MOSEMBLI AND ADDOSIMENT DIMENSTONS
Tolerance mm + : +0,1  Rated speed rpm : 1250		. 13	I Dimonoion K mm . 77
Rated speed rpm : 1250	VOLT	: 12	
Del. quantity + Tolerance mm + : +0,2 cm3/1000 strokes : 33.5 + Dimension MS mm : 1,3 Tolerance + Tolerance mm + : +0,2	Datad aread man	. 1250	
cm3/1000 strokes : 33.5 + Dimension MS mm : 1,3 Tolerance + Tolerance mm + : +0,2		. 1230	
Tolerance + Tolerance mm + : +-0,2		. 77 5	
		. 33.3	
	cm3/1000 str. +-	: 0.5	
T	CIID/ 1000 Str. T-	. 0.7	Т

CONTROL LEVER POSITION SET

Control lever

: 36,0..40,0 position YA mm

Control lever position YB mm : 47,7..57,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.06.96 : ISO 4113 Test oil

: 0 460 424 132 Part no. Pump designation: VE4/12F1350R621-1

Customer-spec. information : IVECO-FIAT Customer

: 8040.45.5100 EU2 Motor

85.0 Power KW

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +:

Overflow

0.55 restriction mm

0.35 Inlet press. bar : 0.05 Tolerance bar + :

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar Tolerance bar +: 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 1000

Aneroid pressure

hPa 1000

1.5 Setting mm Tolerance mm 0.1 Shutoff solenoid 24 Volt

KSB/AFB Volt 24

#### SUPPLY PUMP PRESSURE

1000 Rated speed rpm Aneroid pressure

1000 Supply pomp

pressure bar 6.9 Tolerance bar +-: 0.3

Shutoff solenoid Valt

KSB/AFB Volt 24

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

:

24

700 Rated speed rpm : Aneroid pressure

1000 hPa Del. quantity

cm3/1000 strokes : 72.0

Tolerance cm3/1000 str. + :0.5

Spread

cm3/1000 strokes : 3.5 Check tolerance

cm3/1000s.5.0

Shutoff solenoid 24 Volt

KSB/AFB Volt 24 :

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 53.0

Tolerance

cm3/1000 str. +-:0.5

Shutoff solenoid Volt

24

Check tolerance cm3/1000s.

5.0

KSB/AFB Volt 24

IDLE SETTING

Rated speed rpm : 325	+
Del. quantity cm3/1000 strokes : 17.0	KSB/AFB Volt : 24
Tolerance	Setting point KSB Rated speed rpm : 340
cm3/1000 str. + : 2.0	† Aneroid pressure
Shutoff solenoid Volt : 24	† hPa : 1000
Spread cm3/1000 strokes : 3.5	SV travel mm : 2.0
cm3/1000 strokes : 3.5 Check tolerance	Tolerance mm +-: 0.3 + Check
cm3/1000s. : 5.0	tolerance mm +-: 1.2
KSB/AFB Volt : 24	+ Shutoff solenoid + Volt : 24
	+
	Rated speed rpm : 450 Aneroid pressure
FULL-LOAD SPEED REGULATION	hPa : 1000
	SV travel mm : 3.0
Rated speed rpm : 1550 Pressure hPa : 1000	† Tolerance mm +-: 0.6
Del. quantity	tolerance mm + : 0.7
cm3/1000 strokes : 15.0 Tolerance	† Shutoff solenoid
cm3/1000 str. +-: 3.0	+ Volt : 24
Shutoff solenoid Volt : 24	SUPPLY PUMP PRESSURE CHARACTERISTIC
	Rated speed rpm : 1100
KSB/AFB Volt : 24	+ Aneroid pressure + hPa : 1000
STARTING FUEL DELIVERY	+ Supply pomp
Rated speed rpm : 100	t pressure bar : 7.5 Tolerance bar + : 0.3
Del. quantity cm3/1000 strokes : 73.0	† Shutoff solenoid
Tolerance	+ Volt : 24
cm3/1000 str. + : 25.0 Shutoff solenoid	KSB/AFB Volt : 24
Volt : 24	Rated speed rpm : 700
KSB/AFB Volt : 24	† Aneroid pressure
NODANIB VOCE . E4	+ hPa : 1000 + Supply pomp
	† pressure bar : 5.2
	t Tolerance bar +: 0.3 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 24
	KSB/AFB Volt : 24
TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 450
Rated speed rpm : 1100	† Aneroid pressure
Aneroid pressure hPa : 1000	the ham the thickness of the ham to the ham
	pressure bar : 7.0
SV travel mm : 2.7 Tolerance mm +-: 0.1	Tolerance bar +-: 0.8  Shutoff solenoid
Check	Volt : 24
tolerance mm + : 0.7 Shutoff solenoid	OVERFLOW QUANTITY
Volt : 24	- OVERFLOW QUANTITY

Rated speed rpm Overflow quantity	:	500		‡	Aneroid pressure hPa	:	1000
ccm/10s Tolerance	:	63.8		1	Del. quantity cm3/1000 strokes	:	1.5
ccm/10s +-	:	22.2		Ì	Tolerance cm3/1000 str. +-		1.5
Check tolerance ccm/10s +-		22.2		Ì	Check tolerance cm3/1000s. +-		1.5
Shutoff solenoid	•		•	}	Shutoff solenoid	•	
Volt	:	24	•	‡	Volt	:	24
KSB/AFB Volt	:	24		‡	KSB/AFB Volt	:	24
Rated speed rpm Aneroid pressure	:	1350		‡	Rated speed rpm Aneroid pressure	:	600
hPa	:	1000		+	hPa	:	350
Overflow quantity ccm/10s	:	97.2		Ŧ	Del. quantity cm3/1000 strokes	:	69.5
Tolerance ccm/10s ←	:	41.6		Ţ	Tolerance cm3/1000 str. +	:	0.5
Check tolerance				‡	Check tolerance cm3/1000s. +-	:	4.0
ccm/10s +-	:	41.6		╁	Shutoff solenoid Volt		24
Shutoff solenoid Volt	:	24		Ŧ		•	
KSB/AFB Volt	:	24		<del>†</del>	KSB/AFB Volt	:	24
DELIVERY AND BREAK	(AWA	Y CHARAC	TERISTIC .	‡	Rated speed rpm Aneroid pressure	:	1350
				+	hPa	:	1000
Rated speed rpm Aneroid pressure	:	1550		‡	Del. quantity cm3/1000 strokes	:	69.5
hPa Del. quantity	:	1000		‡	Tolerance cm3/1000 str. +		2.0
cm3/1000 strokes	:	15.0		+	Check tolerance		
Tolerance cm3/1000 str. +-	:	3.0		<b>†</b>	cm3/1000s. +- Shutoff solenoid	•	3.5
Check tolerance cm3/1000s. +-	•	6.0		‡	Volt	:	24
Shutoff solenoid	•	_		+	KSB/AFB Volt	:	24
Volt	•	24		Ţ.	Rated speed rpm	:	500
KSB/AFB Volt	:	24		‡	Aneroid pressure hPa	:	1000
Rated speed rpm Aneroid pressure	:	1475		Ì	Del. quantity cm3/1000 strokes		77.5
hPa	:	1000		+	Tolerance		
Del. quantity cm3/1000 strokes	:	50.0		‡	cm3/1000 str. +- Check tolerance	:	2.0
Tolerance cm3/1000 str. +-	:	6.0		‡	cm3/1000s. +- Shutoff solenoid	:	3.5
Check tolerance cm3/1000s. +-		7.0		$\dagger$	Volt	:	24
Shutoff solenoid	•			<del>-</del>	KSB/AFB Volt	:	24
Volt	:	24		‡	Rated speed rpm	:	700
KSB/AFB Volt	:	24		‡	Aneroid pressure hPa	:	1000
Rated speed rpm	:	1600		+	Del. quantity	•	
			•	+	cm3/1000 strokes	:	72.0

Tolerance	+ Tolerance
cm3/1000 str. + : 0.5	cm3/1000 str. +-: 10.0
Check tolerance	+ Shutoff solenoid
cm3/1000s. +-: 3.5	† Volt : 24
Shutoff solenoid	†
Volt : 24	+ KSB/AFB Volt : 24
	+
	+
	+ Rated speed rpm : 130
ELECTR. SHUTOFF	+ Del. quantity
CONTROL LEVER, IDLE STOP	+ cm3/1000 strokes : 75.0
	† Tolerance
Rated speed rpm : 350	→ cm3/1000 str. ← : 15.0
Del. quantity	Shutoff solenoid
cm3/1000 strokes : 1.5	→ Volt : 24
Tolerance	<del>}</del>
cm3/1000 str. + : 1.5	→ KSB/AFB Volt : 24
Check tolerance	<u> </u>
cm3/1000s. +: 1.5	
Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : 5.0	THE PROPERTY OF THE PROPERTY O
the least of the terms of the	Dimension K mm : 3,6
FULL-LOAD STOP CONTROL LEVER	+ Tolerance mm + : +-0,1
LATE FAUR OLD CONTINUE FEATURE	Dimension KF mm : 8,4
Rated speed rpm : 350	+ Tolerance mm +-: +-0,2
	+ MS1 dimension ma : 1,6
Del. quantity cm3/1000 strokes : 1.5	+ Tolerance mm +-: +0,15/-0,1
	+ Toterance mm +-: +0,137-0,1
Tolerance cm3/100C str. +-: 1.5	Ť
	Ť
Spread	CONTROL & FUED DOCTTON
cm3/1000 strokes : 5.0	+ CONTROL LEVER POSITION
Check tolerance	+ SET
cm3/1000s. +-: 1.5	†
Spread	†
cm3/1000 strokes : 5.0	+ Control lever
	position YA mm : 36,940,9
IDLE DELIVERY	_ <b>†</b>
	+ Control lever
Rated speed rpm : 450	+ position YB mm : 38,944,1
Del. quantity	†
cm3/1000 strokes : 1.5	+
Tolerance	+
cm3/1000 str. +-: 1.5	+
Check tolerance	+ End of test-specification sheet
cm3/1000s. +-: 1.5	+
Shutoff solenoid	+
Volt : 24	+
	+
KSB/AFB Volt : 24	+
	+
	<del>}</del>
	1
	1
	1
	1
START TRANSITION	1
ATULI HUMATITOM	1
Rated speed rpm : 250	$\mathbf{I}$
e e e	I
Del. quantity cm3/1000 strokes : 50.0	I
cm3/1000 strokes : 50.0	Τ

**A08** 

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.02.96 Test oil : ISO 4113

: 0 460 494 403 Part no. Pump designation : VE4/9F2150R637

Customer-spec, information

: NISSAN-MISA Customer

: GX-3 Motor

53.0 Power KW :

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature \*C : Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 450 x length mm :

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm 3.2 Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200 Supply pomp

pressure bar

5.9 Tolerance bar +-: 0.3

Shutoff solenoid

12 Volt

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150 Del. quantity cm3/1900 strokes :

Tolerance cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

#### IDLE SETTING

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.5 Tolerance

cm3/1000 str. +-: 2.0 Shutoff solenoid

Volt

12 Spread cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. 3.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 str. +-: 3.0

Shutoff solenoid

Volt 12

#### STARTING FUEL DELIVERY

100 Rated speed rpm :

quantity	+ Shutoff solenoid
/1 <b>000</b> strokes : 60.0	† Volt : 12
erance /1 <b>000</b> str. +-: 15.0	Rated speed rpm : 600
off solenoid	Overflow quantity
it : 12	+ ccm/10s : 63.8
	Tolerance
	+ ccm/10s + : 22.2
	+
	+ Check tolerance
POTTON DUMP TEST OPPOTETOATTONS	+ ccm/10s + : 22.2
JECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid + Volt : 12
MING DEVICE CHARACTERISTIC	I voit : 12
ALIA DEVICE CHARACTERISTIC	T DELIVERY AND BREAKAWAY CHARAC
ted speed rpm : 2150	+
- Production Control	Rated speed rpm : 2500
travel mm : 9.2	+ Del. quantity
lerance mm + : 0.4	+ cm3/1000 strokes : 15.0
eck	+ Tolerance
olerance mm + : 0.7	+ cm3/1000 str. +-: 3.0
utoff solenoid Slt : 12	+ Check tolerance + cm3/1000s. + : 4.5
.: 12	+ cm3/1000s. +: 4.5 + Shutoff solenoid
ted speed rpm : 900	+ Volt : 12
tea opeed (piii 1 700	1
travel mm : 1.2	Rated speed rpm : 2350
terance mm +-: 0.4	+ Del. quantity
eck	+ cm3/1000 strokes : 33.3
lerance mm + : 0.7	+ Tolerance
utoff solenoid	+ cm3/1000 str. $+$ : 4.0
lt : 12	+ Check tolerance
IPPLY PUMP PRESSURE CHARACTERISTIC	+ cm3/1000s. +: 5.5 + Shutoff solenoid
PPLY PUMP PRESSURE CHARACTERISTIC	+ Volt : 12
ated speed rpm : 2150	1 1000
upply pomp	Rated speed rpm : 2700
ressure bar : 8.7	+ Del. quantity
olerance bar + : 0.3	+ cm3/1000 strokes : 2.5
nutoff solenoid	+ Tolerance
olt : 12	+ cm3/1000 str. +-: 2.5
	+ Check tolerance
ated speed rpm : 900	cm3/1000s. + : 2.5
upply pomp ressure bar : 5.0	+ Shutoff solenoid + Volt : 12
olerance bar + : 0.3	12
nutoff solenoid	Rated speed rpm : 900
olt : 12	+ Del. quantity
	+ cm3/1000 strokes : 42.2
ERFLOW QUANTITY	+ Tolerance
	+ cm3/1000 str. + : 1.5
ted speed rpm : 2150	+ Check tolerance
erflow quantity	+ cm3/1000s. + : 2.5
m/10s : 97.2	+ Shutoff solenoid + Volt : 12
olerance cm/10s +- : 41.6	† Volt : 12
m/ 105 T : 41.0	Rated speed rpm : 1200
eck tolerance	+ Del. quantity
	cm3/1000 strokes : 43.2
m/10s +-: 41.6	T (110/1000 attores

Tolonopa	Chnood
Tolerance	+ Spread
cm3/1000 str. +-: 1.5	+ cm3/1000 strokes : 5.0
Check tolerance	† Check tolerance
cm3/1000s. + : 2.5	+ cm3/1000s. $+-$ : 1.5
Shutoff solenoid	+ Spread
Volt : 12	+ cm3/1000 strokes : 5.0
	+
Rated speed rpm : 1800	IDLE DELIVERY
Del. quantity	
cm3/1000 strokes : 44.3	Rated speed rpm : 800
Tolerance	+ Del. quantity
Check tolerance	+ Tolerance
cm3/1000s. +-: 2.5	+ cm3/1000 str. +-: 2.5
Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. $+$ : 2.5
	+ Shutoff solenoid
Rated speed rpm : 600	+ Volt : 12
Del. quantity	+
cm3/1000 strokes : 41.0	+ Rated speed rpm : 500
Tolerance	+ Del. quantity
cm3/1000 str. +-: 1.5	+ cm3/1000 strokes : 1.5
Check tolerance	Tolerance
cm3/1000s. +-: 2.5	cm3/1000 str. + : 1.5
	• • • • • • • • • • • • • • • • • • •
Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. +-: 1.5
	+ Shutoff solenoid
Rated speed rpm : 2150	+ Volt : 12
Del. quantity	†
<b>cm3/1000</b> strokes : 44.5	+
Tolerance	+
cm3/1000 str. +-: 0.5	+
Check tolerance	<del> </del>
cm3/1000s. + : 1.3	
Shutoff solenoid	
Volt : 12	LIMINOUT GITO RECEITED CITY
, 12	Del. quantity
	+ cm3/1000 strokes : 0.80
	• • • • • • • • • • • • • • • • • • • •
ELECTO SULTAFE	+ Tolerance + cm3/1000 str. +-: 0.02
ELECTR. SHUTOFF	
CONTROL LEVER, IDLE STOP	Check tolerance
Duka Laura da uma	+  cm3/1000s. + : 0.10
Rated speed rpm : 375	OTANT TOANIOTTTON
Del. quantity	+ START TRANSITION
cm3/1000 strokes : 1.5	†
Tolerance	+ Rated speed rpm : 400
cm3/1000 str. +-: 1.5	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 45.0
cm3/1000s. +-: 1.5	+ Tolerance
Spread	+ cm3/1000 str. + : 20.0
cm3/1000 strokes : 5.0	+ Shutoff solenoid
UIID 1000 DELONGO I DIO	+ Volt : 12
FULL-LOAD STOP CONTROL LEVER	1
TOLL-LUAD STOP CONTROL LEVER	I
Dated and on the 775	T Dotted anged 270
Rated speed rpm : 375	Rated speed rpm : 270
Del. quantity	+ Del. quantity
cm3/1000 strokes : 1.5	+ cm3/1000 strokes : 70.0
Tolerance	I falamanan
	+ Tolerance
cm3/1000 str. +-: 1.5	cm3/1000 str. + : 20.0

Volt

12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,2
Tolerance mm + : +0,2
KSB travel mm : 4,3
TLA travel mm : 6,5

POTENTIOMETER SET

1. measurement

voltage Volt : 5,0

1. measurement

voltage Volt : 0,8

CONTROL LEVER POSITION SET

Control lever

position YA mm : 35,1..39,1

Control Lever

position YB mm : 56,9..68,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.07.96 Test oil : ISO 4113

Part no. : 0 460 423 002 Pump designation : VE3/12F1125R532

Customer—spec. information Customer : MWM

Motor : TD 226-B3
Power KW : 55.0

# TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 840

**REMARKS** 

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,04 Outlet : B

#### INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 600

Setting mm : 3.0
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 600
Supply pomp
pressure bar : 5.0
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 91.0
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 4.0
Shutoff solenoid
Volt : 12

#### IDLE SETTING

375 Rated speed rpm : Del. quantity cm3/1000 strokes : 21.0 Tolerance cm3/1000 str. +-: 3.0 Shutoff solenoid 12 Volt Spread cm3/1000 strokes : **3.**5 Check tolerance 6.5 cm3/1000s.

### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1125 Del. quantity

cm3/1000 strokes : 63.5

Tolerance cm3/1000 str. +-: 3.0	+ Rated speed rpm : 1050 + Overflow quantity
Shutoff solenoid	+ ccm/10s : 152.7
Volt : 12	+ Tolerance + ccm/10s +-: 41.6
SET GRADUATED STARTING DELIVERY	Check tolerance
CONTROL LEVER, IDLE STOP	+ ccm/10s +-: 41.6 + Shutoff solenoid
Rated speed rpm : 100 Del. quantity	† Volt : 12
cm3/1000 strokes : 100.0	Rated speed rpm : 400
Tolerance cm3/1000 str. +-: 1.0	Overflow quantity ccm/10s : 111.1
Shutoff solenoid Volt : 12	+ Tolerance + ccm/10s + : 22.2
	+ Check tolerance
	+ ccm/10s +-: 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid + Volt : 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 700	Rated speed rpm : 1125
SV travel mm : 4.4	+ Del. quantity + cm3/1000 strokes : 63.5
Tolerance mm +-: 0.4 Check	+ Tolerance + cm3/1000 str. +-: 3.0
tolerance mm +-: 0.8 Shutoff solenoid	+ Check tolerance + cm3/1000s. +-; 8.5
Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 500	+
SV travel mm : 1.3	+ Rated speed rpm : 1200 + Del. quantity
Tolerance mm + : 0.4 Check	cm3/1000 strokes : 7.5 Check tolerance
tolerance mm + : 0.8	+ cm3/1000s. $+-$ : 7.5
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Rated speed rpm : 1250 - Del. quantity
Rated speed rpm : 1050	cm3/1000 strokes : 1.5
Supply pomp pressure bar : 8.0	+ cm3/1000 str. +-: 1.5
Tolerance bar + : 0.3 Shutoff solenoid	+ Check tolerance + cm3/1000s. +-: 1.5
Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 400 Supply pomp	+ Rated speed rpm : 1150
pressure bar : 3.7	+ Del. quantity
Tolerance bar + : 0.3 Shutoff solenoid	+ cm3/1000 strokes : 34.0 + Tolerance
Volt : 12	+ cm3/1000 str. +-: 15.0 + Check tolerance
OVERFLOW QUANTITY	cm3/1000s. +-: 15.0

Shutoff solenoid		+
Volt :	12	+ ELECTR. SHUTOFF
Rated speed rpm :	1050	CONTROL LEVER, IDLE STOP
Del. quantity cm3/1000 strokes :	84.0	Rated speed rpm : 375
Tolerance cm3/1000 str. + :	1.5	Del. quantity cm3/1000 strokes : 1.5
Check tolerance cm3/1000s. +-:	3.0	+ Tolerance + cm3/1000 str. +-: 1.5
Shutoff solenoid Volt :	12	+ Check tolerance + cm3/1000S. +-: 1.5
Rated speed rpm :	600	+ Spread + cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes :	92.0	FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +-: Check tolerance	3.0	+ Rated speed rpm : 375 + Del. quantity
cm3/1000s. +-: Shutoff solenoid	5.5	cm3/1000 strokes : 1.5 Tolerance
Volt :	12	cm3/1000 str. +-: 1.5 Spread
Rated speed rpm : Del. quantity	400	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : Tolerance	87.5	cm3/1000s. +-: 1.5 Spread
cm3/1000 str. + : Check tolerance	3.0	cm3/1000 strokes : 5.0
cm3/1000s. +-: Shutoff solenoid	4.0	IDLE DELIVERY
Volt :	12	Rated speed rpm : 450 Del. quantity
Rated speed rpm : Del. quantity	800	cm3/1000 strokes : 1.5 Tolerance
cm3/1000 strokes : Tolerance	91.0	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000 str. +-: Check tolerance	0.5	cm3/1000s. +-: 1.5 + Shutoff solenoid
cm3/1000s. +: Shutoff solenoid	2.5	+ Volt : 12
Volt :	12	‡
MECHANICAL SHUTOFF		<del>-</del>
Rated speed rpm : Del. quantity	1050	START TRANSITION
cm3/1000 strokes : Tolerance	1.5	Rated speed rpm : 250 Del. quantity
cm3/1000 str. +-: Spread	1.5	cm3/1000 strokes : 90.0 Tolerance
cm3/1000 strokes : Check tolerance	5.0	cm3/1000 str. + : 20.0 Shutoff solenoid
cm3/100Gs. +-: Spread	1.5	Volt : 12
cm3/1000 strokes : Shutoff solenoid	5.0	Rated speed rpm : 180
Volt :	12	Del. quantity cm3/1000 strokes : 130.0

Tolerance

cm3/1000 str. +-: 20.0

Shutoff solenoid

12 Volt

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,6 Tolerance mm + : +-0,1 Dimension KF mm : 6,4 Tolerance mm + : +-0,2

MS1 dimension mm : 1,1 Tolerance mm + : +0,15/-0,1

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 41,4..45,4

Control lever

position YB mm : 37,5..43,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.02.96 Test oil : ISO 4113

Part no. : 0 460 426 220 Pump designation : VE6/12F1150R534

Customer—spec. information Customer : MWM Motor : TD 226-B6 Power KW : 92.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar +- : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 700

Setting mm : 2.3
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 700 Supply pomp

pressure bar : 5.9
Tolerance bar + : 0.3
Shutoff solenoid

Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 4.0
Shutoff solenoid
Volt : 12

# IDLE SETTING

Rated speed rpm : 325 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 str. + :3.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 6.5

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1150
Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

		l ch	المعامد عصمانا		
Rated speed rpm Del. quantity	: 100		outoff solenoid olt	:	12
cm3/1000 strokes Tolerance	: 90.0		nted speed rpm verflow quantity	: 50	0
cm3/1000 str. +- Shutoff solenoid	1.0	+ cc	m/10s blerance	: 12	5.0
Volt	: 12·		cm/10s +	: 2	2.2
		+ cc	neck tolerance cm/10s +- nutoff solenoid	: 2	2.2
INJECTION-PUMP TE	ST SPECIFICATIONS		olt	:	12
TIMING DEVICE CHA	ARACTERISTIC	DE	ELIVERY AND BREAK	AWAY CH	ARACTERISTIC
Rated speed rpm	: 800		ated speed rpm	: 115	0
SV travel mm	; 3.6		3/1000 strokes	: 6	1.0
Tolerance mm +	-: 0.4	T T	lerance	•	,,,,
Check	-: 0.7	+ cn	n3/1000 str. + neck tolerance	:	0.5
Shutoff solenoid Volt	40	+ cn	n3/1000s. +- nutoff solenoid	:	3.0
VOCC	: 12	1	olt	•	12
Rated speed rpm	: 600	+		: 122	
SV travel mm	: 0.7		el. quantity		
Tolerance mm +- Check	-: 0.4	+ cn	n3/1000 strokes neck tolerance	:	7.5
tolerance mm +	-: 0.7	+ cn	n3/1000s. +-	:	7.5
Shutoff solenoid Volt	: 12		nutoff solenoid olt	:	12
SUPPLY PUMP PRESS	SURE CHARACTERISTIC		ated speed rpm	: 125	0
Rated speed rpm	: 1050	<del> </del> cn	n3/1000 strokes	:	1.5
Supply pomp pressure bar	: 7.8		olerance n3/1000 str. +	•	1.5
Tolerance bar +			neck tolerance	•	
Shutoff solenoid Volt		+ cn	n3/1000s. + nutoff solenoid	:	1.5
	: 500		olt	:	12
Rated speed rpm Supply pomp			ated speed rpm	: 117	0
pressure bar Tolerance bar +-	: 4.3 -: 0.3	+ cn	el. quantity n3/1000 strokes	: 4	0.0
Shutoff solenoid Volt	: 12		olerance n3/1000 str. +-	: 1	5.0
OVERFLOW QUANTITY	,		neck tolerance n3/1000s. +-	: 1	5.0
		+ st	nutoff solenoid		
Rated speed rpm	: 1050	† v	olt	:	12
Overflow quantity ccm/10s	' : 138.8	1 0.	ated speed rpm	: 105	in .
Tolerance	. 130.0		el quantity	. 103	
	-: 41.6	+ cn	n3/1000 strokes olerance	: 6	7.5
Check tolerance ccm/10s +-	-: 41.6	1	n3/1000 str. +	:	1.5

Check tolerance		→ Tolerance
cm3/1000s. +-	3.0	+ cm3/1000 str. $+$ : 1.5
Shutoff solenoid		- Check tolerance
Volt	: 12	+  cm3/1000 s. + + : 1.5
7017	•	Spread
Rated speed rpm	: 600	+ cm $3/1000$ strokes : 5.0
Del. quantity		
cm3/1000 strokes	: 65.2	FULL-LOAD STOP CONTROL LEVER
Tolerance	. 05.2	T TOLL LOAD STOP CONTROL LEVER
	: 3.0	T Dated annual man . 750
cm3/1000 str. +-	5.0	Rated speed rpm : 350
Check tolerance		Del. quantity
cm3/1000s. +-	4.0	cm3/1000 strokes : 1.5
Shutoff solenoid	40	+ Tolerance
Volt	: 12	+ cm3/1000 str. +-: 1.5
		+ Spread
Rated speed rpm	: 500	+ cm3/1000 strokes : 5.0
Del. quantity		+ Check tolerance
cm3/1000 strokes	: 60.0	+ cm3/1000s. $+-$ : 1.5
Tolerance		+ Spread
cm3/1000 str. +-	3.0	+ cm3/1000 strokes : 5.0
Check tolerance		-
cm3/1000s. +-	4.0	IDLE DELIVERY
Shutoff solenoid	. ,,,	The restrict
Volt	: 12	Rated speed rpm : 375
VOCC	• 12	+ Del. quantity
Datad amand non	: 900	+ cm3/1000 strokes : 1.5
Rated speed rpm	: 900	
Del. quantity	. /0.0	+ Tolerance
cm3/1000 strokes	: 68.0	+ cm3/1000 str. + : 1.5
Tolerance		+ Check tolerance
cm3/1000 str. +	.: 0.5	+ cm3/1000s. $+-$ : 1.5
Check tolerance		+ Shutoff solenoid
cm3/1000s. +-	2.5	+ Volt : 12
Shutoff solenoid		+
Volt	: 12	+
		+
	<del></del>	<del></del> +
MECHANICAL SHUTOF	F	‡
Rated speed rpm	: 1150	↓ START TRANSITION
Del. quantity		<b>4</b>
cm3/1000 strokes	: 1.5	Rated speed rpm : 250
Tolerance		+ Del. quantity
cm3/1000 str. +	1.5	+ cm3/1000 strokes : 60.0
Spread		+ Tolerance
cm3/1000 strokes	: 5.0	- cm3/1000 str. +-: 15.0
Check tolerance	٠. ا	+ Shutoff solenoid
	: 1.5	
cm3/1000s. +-	1.5	+ Volt : 12
Spread		†
cm3/1000 strokes		† 2.1
Shutoff solenoid		+ Rated speed rpm : 160
Volt	: 12	+ Del. quantity
		+ cm3/1000 strokes : 120.0
ELECTR. SHUTOFF		+ cm3/1000 str. +-: 20.0
CONTROL LEVER, ID	LE STOP	+ Shutoff solenoid
		+ Volt : 12
Rated speed rpm	: 350	<b>+</b>
Del. quantity		
cm3/1000 strokes	: 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
CINDA LOCA GEL ONCO	• •••	ACCESS AND ADDOLLER PRINCIPLO
		Т

Dimension K mm : 3,6
Tolerance mm + : +0,1
Dimension KF mm : 6,4
Tolerance mm + : +0,2
MS1 dimension mm : 1,1

MS1 dimension mm : 1,1 Tolerance mm + : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 41,4..45,4

Control lever

position YB mm : 40,6..46,4

DOCH INJ. FUMP I	EST SPECIFICATIONS	Rated speed rpm : 850 Aneroid pressure
Note remarks		hPa : 1200
Refer to Service	Info for test and	† Setting mm : 1.6
adjustment instru		+ Setting mm : 1.6 + Tolerance mm + : 0.1
See microcard(s)		+ Shutoff solenoid
		+ Volt : 24
Edition	: 22.07.96	+
Test oil	: ISO 4113	SUPPLY PUMP PRESSURE
Dont ne	: 0 460 424 097	Botad speed ppm · 950
		Rated speed rpm : 850
rump designation	: VE4/12F1300R529	+ Aneroid pressure
		+ hPa : 1200
	£	+ Supply pomp
Customer-spec. in	Tormation	+ pressure bar : 6.3 + Tolerance bar + : 0.3
Customer Motor	: PERKINS	
Motor	: T4.40 110TI	+ Shutoff solenoid
	_	+ Volt : 24
TEST BENCH REQUIR	EMENTS	FULL-LOAD DELIVERY WITH BOOST PRESSU
Calibrating-oil		Rated speed rpm : 1000
return		+ Aneroid pressure
temperature °C	: 45	+ hPa : 1200
Tolerance °C +		Del. quantity
TO CET BILLE C	• 1	+ cm3/1000 strokes : 75.5
Overella.		
Overflow	. 0.55	+ Tolerance
restriction man	: 0.55	+ cm3/1000 str. + : 0.5
		+ Spread
		+ cm3/1000 strokes : 4.0
Inlet press. bar	: 0.35	+ Check tolerance
Tolerance bar +-	: 0.05	+ cm3/1000s. : 4.0
		→ Shutoff solenoid
		+ Volt : 24
Test nozzle holde		+
assembly	: 1 688 901 027	+ FULL-LOAD DELIV. WITHOUT BOOST PRESS
		+
Opening pressure		Rated speed rpm : 500
bar	: 250	+ Del. quantity
Tolerance bar +		+ cm3/1000 strokes : 61.5
eer exitee (Feb.		Tolerance
		+ cm3/1000 str. + : 0.5
Test Lines	: 1 680 750 073	+ Shutoff solenoid
TODE CITIES	000 , 50 0, 5	+ Volt : 24
Outside diameter	• 6.00	+ Check tolerance
vutside diameter	. 0.00	+ cm3/1000s. : 4.0
	. 200	T (IIID/10003 4.0
x inside diameter		T TOLE CETTING
x Length mm	: 450	IDLE SETTING
		Rated speed rpm : 300
DEMARKS		+ Del. quantity
REMARKS		
		+ cm3/1000 strokes : 10.0
		+ Tolerance
		+ cm3/1000 str. + : 2.0
		Shutoff solenoid
INJECTION PUMP SE	TTING VALUES	+ Volt : 24
		+ Spread

Check tolerance		1
cm3/1000s.	: 5.0	SV travel mm : 3.3
		+ Tolerance mm +: 0.3
		+ Check
		tolerance mm + : 0.7
N. 1. 1.045 CD-55 D		+ Shutoff solenoid
FULL-LOAD SPEED R	REGULATION	† Volt : 24
Rated speed rpm	: 1440	SUPPLY PUMP PRESSURE CHARACTERISTIC
Pressure hPa	1200	+
Del. quantity		Rated speed rpm : 1300
cm3/1000 strokes	: 50.0	+ Aneroid pressure
Tolerance	·: 2.0	+ hPa : 1200
cm3/1000 str. +- Shutoff solenoid	2.0	Supply pomp : 8.2
Volt	: 24	Tolerance bar +: 0.3
	2	+ Shutoff solenoid
STARTING FUEL DEL	.IVERY	† Volt : 24
Rated speed rpm	: 100	+ Rated speed rpm : 500
Del. quantity	. 100	+ Aneroid pressure
cm3/1000 strokes	: 110.0	+ hPa : 1200
Tolerance		+ Supply pomp
cm3/1000 str. +-	30.0	+ pressure bar : 4.8
Shutoff solenoid Volt	: 24	<pre>+ Tolerance bar + : 0.3 + Shutoff solenoid</pre>
VOCC	. 24	Volt : 24
		+
		+ OVERFLOW QUANTITY
		+ Rated speed rpm : 1300
INJECTION-PUMP TE	ST SPECIFICATIONS	Aneroid pressure
		+ hPa : 1200
TIMING DEVICE CHA	ARACTERISTIC	+ Overflow quantity + ccm/10s : 97.2
Rated speed rpm	: 950	+ Tolerance
Aneroid pressure	. 750	+ ccm/10s + : 27.7
hPa	: 1200	+
<b>.</b>		+ Check tolerance
SV travel mm	: 2.7 ·: 0.3	+ ccm/10s +: 27.7 + Shutoff solenoid
Tolerance mm +- Check	0.5	Volt : 24
tolerance mm +	-: 0.7	+
Shutoff solenoid		Rated speed rpm : 700
Volt	: 24	+ Aneroid pressure
Rated speed rpm	: 750	† hPa : 1200 † Overflow quantity
Aneroid pressure		+ ccm/10s : 63.8
hPa		Talamana
- 11	: 1200	+ Tolerance
SV travel mm	: 0.6	ccm/10s + : 22.2
SV travel mm Tolerance mm +		ccm/10s +: 22.2 Check tolerance
SV travel mm Tolerance mm +- Check	: 0.6 -: 0.3	ccm/10s + : 22.2
SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid	: 0.6 -: 0.3 -: 0.6	ccm/10s +: 22.2 
SV travel mm Tolerance mm +- Check tolerance mm +-	: 0.6 -: 0.3	ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2 Shutoff solenoid Volt : 24
SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	: 0.6 -: 0.3 -: 0.6 : 24	ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid
SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt Rated speed rpm	: 0.6 -: 0.3 -: 0.6	ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	: 0.6 -: 0.3 -: 0.6 : 24	ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERISTIC

Aneroid pressure	1200	+ Del. quantity
hPa : Del. quantity	1200	+ cm3/1000 strokes : 75.5 + Tolerance
cm3/1000 strokes : Tolerance	50.0	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000 str. +-:	2.0	+ cm3/1000s. +-: 3.5
Check tolerance cm3/1000s. +-:	6.0	+ Shutoff solenoid + Volt : 24
Shutoff solenoid Volt :	24	+ Rated speed rpm : 1000
-		+ Aneroid pressure + hPa : 1200
Rated speed rpm : Aneroid pressure		+ Del. quantity
hPa : Del. quantity	1200	+ cm3/1000 strokes : 75.5 + Tolerance
cm3/1000 strokes : Check tolerance	30.0	+ cm3/1000 str. +-: 0.5 + Check tolerance
cm3/1000s. +-:	10.0	+  cm3/1000s. + : 3.0
Shutoff solenoid Volt :	24	+ Shutoff solenoid + Volt : 24
Rated speed rpm :	1580	
Aneroid pressure hPa :	1200	MECHANICAL SHUTOFF
Del. quantity		Rated speed rpm : 1300
cm3/1000 strokes : Tolerance		+ Aneroid pressure + hPa : 1200
cm3/1000 str. + : Check tolerance	1.5	+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000s. +-: Shutoff solenoid	1.5	+ Tolerance + cm3/1000 str. +-: 1.5
Volt :	24	+ Check tolerance
Rated speed rpm :	700	+ cm3/1000s. + : 1.5 + Shutoff solenoid
Aneroid pressure hPa :	550	+ Volt : 24
Del. quantity cm3/1000 strokes :		ELECTR. SHUTOFF
Tolerance		CONTROL LEVER, IDLE STOP
cm3/1000 str. + : Check tolerance	0.5	Rated speed rpm : 300
cm3/1000s. + : Shutoff solenoid	3.0	+ Del. quantity + cm3/1000 strokes : 1.5
Volt :	24	Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm :	1300	+ Check tolerance
Aneroid pressure hPa :	1200	+ cm3/1000s. +-: 1.5
Del. quantity cm3/1000 strokes :	78.0	FULL-LOAD STGP CONTROL LEVER
Tolerance cm3/1000 str. +-:	1.5	Rated speed rpm : 300  Del. quantity
Check tolerance		+ cm3/1000 strokes : 1.5
cm3/1000s. + : Shutoff solenoid	3.5	Tolerance + cm3/1000 str. + : 1.5
Volt :	24	+ Check tolerance + cm3/1000s. +: 1.5
Rated speed rpm : Aneroid pressure	700	+ IDLE DELIVERY
hPa :	1200	The recive

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 str. + : 1.5
Check tolerance
cm3/1000s. + : 1.5

Shutoff solenoid

Volt : 24

### START TRANSITION

Rated speed rpm : 250 Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 str. + : 20.0

Shutoff solenoid

Volt : 24

Rated speed rpm : 150

Del. quantity

cm3/1000 strokes : 120.0

Tolerance

cm3/1000 str. + : 30.0

Shutoff solenoid

Volt : 24

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,4
Tolerance mm + : +0,2
MS1 dimension mm : 1,15

Tolerance mm +-: +0,15/-0,1

KSB travel mm : 8,5

#### CONTROL LEVER POSITION

SET

Control lever

position YA mm : 31,5..33,5

Control lever

position YB mm : 47,7..56,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.04.96 Test oil : ISO 4113

Part no. : 0 460 484 124 Pump designation : VE4/8F2300R598-8

Customer—spec. information Customer : RENAULT

Motor : F8Q - 620 DDS

Power KW : 45.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

# REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm + : 0.2
Shutoff colonoid

Shutoff solenoid

Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar : 5.5 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid

12

#### IDLE DELIVERY

Volt

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. +- : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

### HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Tolerance	1
cm3/1000 str. +-: 2.0	
Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	†
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
LOFF-FOWD SLEED KEROFYLTON	Rated speed rpm : 2000
Rated speed rpm : 2450	+ Naced Speed (piii : 2000
Del. quantity	- SV travel mm : 6.3
cm3/1000 strokes : 24.5	Tolerance mm + : 0.4
Tolerance cm3/1000 str. +-: 3.0	+ Check + tolerance mm +-: 0.6
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	+
STARTING FUEL DELIVERY	+ Rated speed rpm : 600
Rated speed rpm : 100	† + SV travel mm : 1.2
Del. quantity	Tolerance mm + : 0.4
cm3/1000 strokes : 55.0	+ Check
Tolerance	tolerance mm + : 0.6
cm3/1000 str. + : 15.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt : 12	† Volt : 12
, ,	SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
	+ Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp + pressure bar : 7.7
SETTING	+ pressure bar : 7.7 + Tolerance bar + : 0.3
DELIVERY DIFFERENCE	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 1250	100
Del. quantity cm3/1000 strokes : -7.0	+ Rated speed rpm : 600 + Supply pomp
Tolerance	- pressure bar : 3.5
cm3/1000 str. +-: 1.0	+ Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
PRESSURE DIFFERENCE	T OVERFLOW QUANTITY
INCODONE DITTEMENT	+ COUNTY SON
Rated speed rpm : 1250	+ Rated speed rpm : 2250
Del. quantity	+ Overflow quantity
cm3/1000 strokes : -0.2 Tolerance	+ ccm/10s : 97.2 + Tolerance
cm3/1000 str. +-: 0.1	+ ccm/10s +-: 41.6
Shutoff solenoid	+
Volt : 12	+ Check tolerance
TIMENO ARIZOR TRAVEL ATEFEDENCE	+ ccm/10s +: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1250	+
Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : -0.7	+ Overflow quantity
Tolerance cm3/1000 str. +-: 0.1	+ ccm/10s : 63.8 + Tolerance
cm3/1000 str. +-: 0.1 Shutoff solenoid	+ ccm/10s +-: 22.2
Volt : 12	+
	+

				Talamana
Check tolonome			†	Tolerance cm3/1000 str. +-: 1.0
Check tolerance +-		22.2	Ť	cm3/1000 str. +-: 1.0 Check tolerance
Shutoff solenoid	•	۲۲.۲	Ť	
Volt		12	Ť	cm3/1000s. +-: 2.3 Shutoff solenoid
VOCE	•	12	T	Volt : 12
DELIVERY AND BREA	ralia.	V CUADACTEDICTIC	T	. 12
DECTACK! WAS DUCK	NAMA	1 CHARACIERTSITC	Ι	Rated speed rpm : 600
Rated speed rpm		2450	I	Del. quantity
Del. quantity	•	2420	I	cm3/1000 strokes : 31.9
cm3/1000 strokes	•	24.5	I	Tolerance
Tolerance	•	24.5	I	cm3/1000 str. +-: 1.5
cm3/1000 str. +-	•	3.0	7	Check tolerance
Check tolerance	•	0.0	1	cm3/1000s. +-: 2.3
cm3/1000s. +-	•	4.0	1	Shutoff solenoid
Shutoff solenoid		****	1	Volt : 12
Volt	:	12	+	12
	•		1	Rated speed rpm : 1250
Rated speed rpm	:	2650	1	Del. quantity
Del. quantity			+	cm3/1000 strokes : 31.5
cm3/1000 strokes	:	9.5	1	Tolerance
Check tolerance			+	cm3/1000 str. +-: 0.5
cm3/1000s. +-	:	5 <b>.0</b>	+	Check tolerance
Shutoff solenoid		• -	+	cm3/1000s. +-: 2.3
Volt	:	12	+	Shutoff solenoid
		2050	+	Volt : 12
Rated speed rpm	:	2950	†	
Del. quantity		2.5	†	
cm3/1000 strokes Tolerance	•	2.5	T	ELECTR. SHUTOFF
cm3/1000 str. +-		2.5	I	CONTROL LEVER, IDLE STOP
Check tolerance		2.3	I	CONTROL LEVERY IDEL STOP
cm3/1000s. +-	•	2.5	1	Rated speed rpm : 410
Shutoff solenoid	•	2.5	1	Del. quantity
Volt	:	12	1	cm3/1000 strokes : 1.5
			1	Tolerance
Rated speed rpm	:	2250	+	cm3/1000 str. + : 1.5
Del. quantity			+	Check tolerance
cm3/1000 strokes	:	32.1	+	cm3/1000s. +-: 1.5
Tolerance			+	Spread
cm3/1000 str. +-	:	1.0	+	cm3/1900 strokes : 5.0
Check tolerance		2.7	†	FILL LOSD OTOD CONTROL LEVE
cm3/1000s. +-	:	2.3	†	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid		12	†	Rated speed rpm : 410
Volt	•	12	I	Rated speed rpm : 410 Del. quantity
Rated speed rpm	•	1625	I	cm3/1000 strokes : 1.5
Del. quantity	•	1000	I	Tolerance
cm3/1000 strokes	:	31.0	. ↓	cm3/1000 str. + : 1.5
Tolerance	·	• • • • • • • • • • • • • • • • • • • •	1	Spread
cm3/1000 str. +-	:	1.5	+	cm3/1000 strokes : 5.0
Check tolerance			+	Check tolerance
cm3/1000s. +-	:	2.3	+	cm3/1000s. +-: 1.5
Shutoff solenoid		4.5	+	Spread
Volt	:	12	+	cm3/1000 strokes : 5.0
<b>8</b>		2000	+	
Rated speed rpm		/ I 11 M 3	+	
	:	2000	ì	
Del. quantity	•		İ	
	•	32.5	‡	

# CHECKING LOAD-DEPENDENT START OF DELIVERY

#### DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-9.5
Tolerance		7.0
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +-	:	3.0
Shutoff solenoid		12
Volt		12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-0.7
Tolerance cm3/1000 str. +-	:	0.1
Check tolerance cm3/1000s. +-	:	0.1
Shutoff solenoid Volt	:	12

# DELIVERY DIFFERENCE

Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes	:	5.0
Tolerance cm3/1000 str. +-		3.0
Check tolerance	•	5.0
cm3/1000S. +- Shutoff solenoid	:	3.0
Volt	:	12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : Tolerance mm +:	1250 0.2
Check tolerance mm +-:	0.3
Shutoff solenoid Volt :	12

# START TRANSITION

Rated speed rpm	:	310
Del. quantity cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +-	•	10.0
Shutoff solenoid	•	
Volt	:	12

Rated speed rpm	:	210
Del. quantity cm3/1000 strokes	:	60.0
Tolerance		45.0

cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension		: 3,3
Tolerance	mm +-	: +-0,1
Dimension		: 5,4
Tolerance	mm +-	: +-0,2
Dimension		: 1,3
Tolerance	mm +-	: +-0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.07.96 Test oil : ISO 4113

Part no. : 0 460 484 099 Pump designation : VE4/8F2500R611-1

Customer-spec. information Customer : PSA Motor : TUD 5-L3 Power KW : 42.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

# DESCRIPTION OF DELIVERY

# BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,8
Tolerance mm + : +-0,2
Outlet : A

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.0
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500 Supply pomp

pressure par : 6.3
Tolerance par + : 0.3
Shutoff colonaid

Shutoff solenoid

Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500 Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 2.0

Tolerance

cm3/1000 str. + : 0.5

Shutoff solenoid

Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 400 Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. +-: 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
HIGH IDLE SETTING	Rated speed rpm : 2200 Supply pomp
Rated speed rpm · 475	pressure bar : 8.1
Del. quantity	Tolerance bar + : 0.3
cm3/1000 strokes : 12.0 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +-: 1.0	T voct . 12
Shutoff solenoid	Rated speed rpm : 800
Volt : 12	+ Supply pomp
FULL-LOAD SPEED REGULATION	+ pressure bar : 4.6 + Tolerance bar + : 0.3
TOLL LOAD OF LED REGOLATION	+ Shutoff solenoid
Rated speed rpm : 2650	+ Volt : 12
Del. quantity	OURDS! ON OUANTTTY
cm3/1000 strokes : 12.0 Tolerance	OVERFLOW QUANTITY
cm3/1000 str. +-: 2.0	Rated speed rpm : 2450
Shutoff solenoid	+ Overflow quantity
Volt : 12	+ ccm/10s : 97.2 + Tolerance
	+ ccm/10s +-: 41.6
SET GRADUATED STARTING DELIVERY	+
CONTROL LEVER, IDLE STOP	+ Check tolerance + ccm/10s +-: 41.6
Rated speed rpm : 200	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 40.0	†
Tolerance cm3/1000 str. +-: 1.0	+ Rated speed rpm : 600 + Overflow quantity
Shutoff sclenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance
	+ ccm/10s + : 22.2
	Check tolerance
	+ ccm/10s +: 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	† Volt : 12
THING DEVICE GIMMAGIENTOITS	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2200	Dated 2007   2007
SV travel mm : 8.3	+ Rated speed rpm : 2650 + Del. quantity
Tolerance mm +: 0.4	+ cm3/1000 strokes : 12.0
Check	+ Tolerance
tolerance mm + : 0.7 Shutoff solengid	+ cm3/1000 str. + : 2.0 - Check tolerance
Volt : 12	+ cm3/1000s. +-: 4.0
	+ Shutoff solenoid
Rated speed rpm : 800	† Volt : 12
SV travel mm : 1.6	Rated speed rpm : 2580
Tolerance mm +: 0.4	+ Del. quantity
Check	+ cm3/1000 strokes : 20.0
tolerance mm + : 0.7 Shutoff solenoid	+ Tolerance + cm3/1000 str. +-: 3.0
Volt : 12	+ Check tolerance
	+ cm3/1000s. $+$ : 5.0

Shutoff solenoid	12	+ Rated speed rpm : 350
/olt :		+ Del. quantity + cm3/1000 strokes : 1.5
Rated speed rpm : Del. quantity	2800	+ Tolerance + cm3/1000 str. +-: 1.5
cm3/1000 strokes : Folerance	1.5	+ Check tolerance - cm3/1000s. +-: 1.5
cm3/1000 str. +-:	1.5	FULL-LOAD STOP CONTROL LEVER
cm3/1000s. +- :	1.5	+
Shutoff solenoid /olt :	12	Rated speed rpm : 350 Del. quantity
Rated speed rpm :	2450	+ cm3/1000 strokes : 1.5 + Tolerance
Del. quantity cm3/1000 strokes :	25.5	+ cm3/1000 str. +-: 1.5 + Check tolerance
Folerance cm3/1000 str. +-:	1.0	+ cm3/1000s. +-: 1.5
Check tolerance	2.2	‡
Shutoff solenoid Volt :	12	‡
Rated speed rpm :		<u> </u>
Del. quantity cm3/1000 strokes :		EXHAUST-GAS RECIRCULATION
Folerance		Rated speed rpm : 1000 Del. quantity
Check tolerance		+ cm3/1000 strokes : 15.3
cm3/1000s. +-: Shutoff solenoid	***	+ Tolerance + cm3/1000 str. + : 1.0
/olt :	12	+ Check tolerance + cm3/1000s. + : 4.0
Rated speed rpm : Del. quantity	1500	+ Shutoff solenoid + Volt : 12
cm3/1000 strokes : Folerance	24.0	‡ START TRANSITION
cm3/1000 str. +-: Check tolerance	0.5	+ Rated speed rpm : 340
cm3/1000s. +-: Shutoff solenoid	2.2	Del. quantity - cm3/1000 strokes : 22.5
olt :	12	Tolerance + cm3/1000 str. +: 10.0
MEGLIANT CAL CIVETOES		<ul> <li>Shutoff solenoid</li> </ul>
MECHANICAL SHUTOFF	2450	+ Volt : 12 +
Rated speed rpm : Del. quantity		Rated speed rpm : 250
cm3/1000 strokes : Tolerance	1.5	+ Del. quantity + cm3/1000 strokes : 52.0
cm3/1000 str. +-: Check tolerance	1.5	+ Tolerance + cm3/1000 str. ++: 17.0
cm3/1000s. + : Shutoff solenoid	1.5	Shutoff solenoid Volt : 12
olt :	12	1
YULL :		•
ELECTR. SHUTOFF		- ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 6,0
Tolerance mm + : +-0,2
Dimension MS mm : 1,0
Tolerance mm + : +-0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.07.96 Test oil : ISO 4113

Part no. : 0 460 484 100 Pump designation : VE4/8F2500R611-2

Customer—spec. information Customer : PSA

Motor : TUD5 -L3 ADC Power KW : 42.0

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

# BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,8
Tolerance mm + : +-0,2
Outlet : A

INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.0
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Supply pomp
pressure bar : 6.3
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 2.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 str. +-: 1.0
Spread
cm3/1000 strokes : 2.0

SNUTOTT SOLENOIG	+
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
HIGH IDLE SETTING	Rated speed rpm : 2200 Supply pomp
Rated speed rpm : 475	
Del. quantity	+ Tolerance bar + : 0.3
cm3/1000 strokes : 12.0	+ Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 str. +-: 1.0	1
Shutoff solenoid	Rated speed rpm : 600
Volt : 12	+ Supply pomp
	+ pressure bar : 4.6
FULL-LOAD SPEED REGULATION	+ Tolerance bar + : 0.3
	+ Shutoff solenoid
Rated speed rpm : 2650	+ Volt : 12
Del. quantity	. , , ,
	T OUTDE OU OU MAITTEN
cm3/1000 strokes : 12.0	+ OVERFLOW QUANTITY
Tolerance	+
cm3/1000 str. +-: 2.0	+ Rated speed rpm : 2450
Shutoff solenoid	+ Overflow quantity
Volt : 12	+ ccm/10s : 97.2
1000	+ Tolerance
	+ ccm/10s +-: 41.6
SET GRADUATED STARTING DELIVERY	†
CONTROL LEVER, IDLE STOP	+ Check tolerance
·	+ ccm/10s $+$ : 41.6
Rated speed rpm : 200	+ Shutoff solenoid
Del. quantity	+ Volt : 12
	T voct : 12
cm3/1000 strokes : 40.0	†
Tolerance	+ Rated speed rpm : 600
cm3/1000 str. + : 1.0	+ Overflow quantity
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance
	+ ccm/10s + : 22.2
	7 (011) (03
	T Should be borners
	+ Check tolerance
	+   ccm/10s  +   :   22.2
INJECTION—PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
	+ Volt : 12
TIMING DEVICE CHARACTERISTIC	1
THE PEATOE OF MINISTER OF THE PEATOE OF THE	DELIVERY AND BREAKAWAY CHARACTERISTIC
Dated aread non a 2200	T SECTACULA MAN DUCHUMAN CHAUNCIEVIDITE
Rated speed rpm : 2200	7 244 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	+ Rated speed rpm : 2650
SV travel mm : 8.3	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 12.0
Check	+ Tolerance
tolerance mm + : 0.7	+ cm3/1000 str. +: 2.0
Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. ++: 4.0
	+ Shutoff solenoid
Rated speed rpm : 800	+ Volt : 12
	+
SV travel mm : 1.6	Rated speed rpm : 2580
Tolerance mm +-: 0.4	Del. quantity
	+ cm3/1000 strokes : 20.0
Check	
tolerance mm + : 0.7	Tolerance
Shutoff solenoid	+ cm3/1000 str. + : 3.0
Volt : 12	+ Check tolerance
· <del>·</del>	+  cm3/1000s. + + : 5.0
	•

Shutoff solenoid

Shutoff solenoid		+ Rated speed rpm : 350		
Volt :	12	+ Del. quantity		
		+ cm3/1000 strokes : 1.5		
Rated speed rpm :	2800	+ Tolerance + cm3/1000 str. +-: 1.5		
Del. quantity cm3/1000 strokes :	1.5	+ cm3/1000 str. + : 1.5 + Check tolerance		
Tolerance	113	+ cm3/1000s. +-: 1.5		
cm3/1000 str. + :	1.5	+		
Check tolerance	A =	+ FULL-LOAD STOP CONTROL LEVER		
cm3/1009s. +-: Shutoff solenoid	1.5	+ Rated speed rpm : 350		
Volt :	12	+ Del. quantity		
		+ cm3/1000 strokes : 1.5		
Rated speed rpm :	2450	+ Tolerance		
Del. quantity cm3/1000 strokes :	26.0	+ cm3/1000 str. + : 1.5 + Check tolerance		
Tolerance		+ cm3/1000s. +: 1.5		
cm3/1000 str. +-:	1.0	+		
Check tolerance		+		
cm3/1000s. +:	2.2	†		
Shutoff salenoid Volt :	12	İ		
	16	1		
Rated speed rpm :	600			
Del. quantity	25 5	+ EXHAUST-GAS RECIRCULATION		
cm3/1000 strokes : Tolerance	25.5	+ Rated speed rpm : 1000		
cm3/1000 str. +-:	1.5	+ Del. quantity		
Check tolerance		+ cm3/1000 strokes : 15.3		
cm3/1000s. +-:	3.0	+ Tolerance		
Shutoff solenoid	12	+ cm3/1000 str. +-: 1.0		
Volt :	12	+ Check tolerance + cm3/1000s. +-: 4.0		
Rated speed rpm :	1500	+ Shutoff solenoid		
Del. quantity		+ Volt : 12		
cm3/1000 strokes :	24.0	‡ START TRANSITION		
Tolerance cm3/1000 str. +-:	0.5	T START TRANSITION		
Check tolerance	013	+ Rated speed rpm : 340		
cm3/1000s. +-:	2.2	+ Del. quantity		
Shutoff solenoid	42	- cm3/1000 strokes : 22.5		
Volt :	12	+       Tolerance         +       cm3/1000 str. ← : 10.0		
		+ Shutoff solenoid		
MECHANICAL SHUTOFF		+ Volt : 12		
Outsel sussel num	2/.50	†		
Rated speed rpm : Del. quantity	2450	T Rated speed rpm : 250		
cm3/1000 strokes :	1.5	+ Del. quantity		
Tolerance		+ cm3/1000 strokes : 52.0		
cm3/1000 str. +-:	1.5	+ Tolerance		
Check tolerance cm3/1000s. +-:	1.5	+ cm3/1000 str. +-: 17.0 + Shutoff solenoid		
Shutoff solenoid	1.0	Volt : 12		
Volt :	12	+		
		ACCEMPLY AND AD INCOMPLET DESIGNATION		
ASSEMBLY AND ADJUSTMENT DIMENSIONS				
	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP Dimension K mm : 3,7			
	- · • ·	+ Tolerance mm + : +-0,2		

Dimension KF mm : 6,0 Tolerance mm + : +-0,2 Dimension MS mm : 1,0 Tolerance mm + : +-0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.11.93 : ISO 4113 Test oil

: 0 460 414 039 Part no. Pump designation : VE4/11F1350R257

Customer-spec. information

: IVECO-FIAT Customer

: 8040.25.200+220 Motor

#### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

bar Tolerance bar + :

Test Lines : 1 680 750 000

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 840

REMARKS

# BEGINNING OF DELIVERY

#### Prestroke

(as of UT) mm : 0,4 Tolerance mm + : + -0.02

Check

tolerance mm +-:+-0.04

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Aneroid pressure

1000

Setting mm 4.0 Tolerance mm + : 0.2 Shutoff solenoid

24 Volt

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1000

Aneroid pressure

1000 hPa

Supply pomp

pressure bar 6.0 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 24

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

93.0

Rated speed rpm : 800

Aneroid pressure

1000 hPa Del. quantity

cm3/1000 strokes :

Tolerance cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes :

Check tolerance

cm3/1000s.5.0

Shutoff solenoid

Volt 24

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 69.0

Tolerance

cm3/1000 str. +-:0.5

Shutoff solenoid

24 Volt

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 24.0

Tolerance	+ Shutoff solenoid
cm3/1000 str. + : 2.0 Shutoff solenoid	+ Volt : 24
Volt : 24 Spread	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 1350 Aneroid pressure
cm3/1000s. : 4.0	+ hPa : 1000
	+ Supply pomp + pressure bar : 7.3
	+ Tolerance bar + : 0.3 + Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 24
Rated speed rpm : 1500 Pressure hPa : 1000	Rated speed rpm : 800
Del. quantity cm3/1000 strokes : 37.0	Rated speed rpm : 500 Aneroid pressure
Tolerance cm3/1000 str. +-: 3.0	+ hPa : 1000 + Supply pomp
Shutoff solenoid	+ pressure bar : 3.9
Volt : 24	+ Tolerance bar + : 0.3 + Shutoff solenoid
STARTING FUEL DELIVERY	+ Volt : 24
Rated speed rpm : 100 Del. quantity	OVERFLOW QUANTITY
cm3/1000 strokes : 115.0 Tolerance	Rated speed rpm : 1350 Aneroid pressure
cm3/1000 str. +-: 25.0	+ hPa : 1000
Shutoff solenoid Volt : 24	+ Overflow quantity + ccm/iOs : 97.2
	+ Tolerance + ccm/10s ++: 41.6
	Check tolerance
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s +-: 41.6 + Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	+ Volt : 24
Rated speed rpm : 1350	Rated speed rpm : 500 Aneroid pressure
Aneroid pressure hPa : 1000	+ hPa : 1000 + Overflow quantity
	ccm/10s : 63.8  Tolerance
SV travel mm : 6.7 Tolerance mm +- : 0.4 Check	ccm/10s +-: 22.2
tolerance mm + : 0.7 Shutoff solenoid	Check tolerance ccm/10s +-: 22.2
Volt : 24	+ Shutoff solenoid
Rated speed rpm : 800	+ Volt : 24
Aneroid pressure hPa : 1000	DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm : 2.1	+ Rated speed rpm : 1500 + Aneroid pressure
Tolerance mm + : 0.4 Check	+ hPa : 1000 + Del. quantity
tolerance mm + : 0.7	cm3/1000 strokes : 37.0

**B**10

Tolerance			+	Tolerance			
cm3/1000 str. +-	:	3.0	+	cm3/1000 str. +	:	0.5	
Check tolerance cm3/1000s. +-		6.0	1	Check tolerance cm3/1000s. +-		3.5	
Shutoff solenoid	•	0.0	Į	Shutoff solenoid	•	J.J	
Volt	:	24	+	Volt	:	24	
			+				
Rated speed rpm	:	1600	†	MECHANICAL CUUTOES			
Aneroid pressure hPa	•	1000	Ī	MECHANICAL SHUTOFF			
Del. quantity	•	1000	1	Rated speed rpm	:	1350	
cm3/1000 strokes	:	1.5	+	Aneroid pressure			
Tolerance		A 5	+	hPa	:	1000	
cm3/1000 str. +- Check tolerance	:	1.5	İ	Del. quantity cm3/1000 strokes		1.5	
cm3/1000s. +-	•	1.5	I	Tolerance	•	1.5	
Shutoff solenoid	•		+	cm3/1000 str. +-	:	1.5	
Volt	:	24	+	Check tolerance			
Data dama ad uum	_	500	†	cm3/1000s. +-	:	1.5	
Rated speed rpm Aneroid pressure	:	500	I	Shutoff solenoid Volt	•	24.	
hPa	:	250	1	4 <b>0.56</b>	•	<b>5</b> -1	
Del. quantity			+				
cm3/1000 strokes	:	79.5	+	ELECTR. SHUTOFF			
Tolerance cm3/1000 str. +-		0.5	†	CONTROL LEVER, IDL	E S	TOP	
Check tolerance	•	0.7	I	Rated speed rpm	:	350	
cm3/1000s. +-	:	4.0	+	Del. quantity	•		
Shutoff solenoid			+	cm3/1000 strokes	:	1.5	
Volt	:	24	†	Tolerance		1 5	
Rated speed rpm	: 4	1350	İ	cm3/1000 str. +-	:	1.5	
Aneroid pressure	•	(3)0	1	cm3/1000s. +-	:	1.5	
hPa	:	1000	+				
Del. quantity		00.5	+	TALE			
cm3/1000 strokes Tolerance	:	90.5	İ	IDLE DELIVERY			
cm3/1000 str. +-	:	1.5	Ţ	Rated speed rpm	:	430	
Check tolerance	•		+	Del. quantity			
cm3/1000s. +-	:	3.5	+	cm3/1000 strokes	:	1.5	
Shutoff solenoid Volt		24	†	Tolerance cm3/1000 str. +-		1.5	
VOLU	•	24	I	Check tolerance	•	1.5	
Rated speed rpm	:	500	+	cm3/1000s. +-	:	1.5	
Aneroid pressure		4000	+	Shutoff solenoid		24	
hPa	:	1000	†	Volt	:	24	
Del. quantity cm3/1000 strokes	•	39.5	I	Rated speed rpm	:	400	
Tolerance	•		1	Del. quantity	•		
cm3/1000 str. +-	:	1.5	+	cm3/1000 strokes	:	8.0	
Check tolerance		3.0	†	Tolerance cm3/1000 str. +-		5.0	
cm3/1000s. +- Shutoff solenoid	:	3.0	Ī	Shutoff solenoid	•	٥,٠	
Volt	:	24	+	Volt	:	24	
			+				
Rated speed rpm	:	800	†				
Aneroid pressure hPa	•	1000	I				
Del. quantity	•	. 505	+				
cm3/1000 strokes	:	93.0	+				

#### START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 50.0
Tolerance
cm3/1000 str. + : 10.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 115.0

Tolerance cm3/1000 str. +-: 25.0 Shutoff solenoid

Volt : 24

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : Dimension KF mm : 5,3
Tolerance mm + : +0,02
Dimension MS mm : 1,4
Tolerance mm + : +0,2

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.01.87 Edition : ISO 4113 rest oil

Part no. : 0 460 414 047 Pump designation : VE4/11F1200R277

Customer-spec. information : CASE Customer

Motor : D 268/885

TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle halde

: 1 688 901 020 assembly

Opening pressure

172 Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 840 x length mm :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

5.5 Setting mm 0.2 Tolerance mm

B13

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Supply pomp

pressure bar 4.0 Tolerance bar +-: 0.3

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800

Del. quantity cm3/1000 strokes : 82.0

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 3.5

IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 18.5

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1260

Del. quantity

cm3/1000 strokes : 57.0

Tolerance

cm3/1000 str. +-: 3.0

STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 str. +-:

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1150

SV travel mm : 7.9

Tolerance mm + : 0.4 +	Del. quantity
Check	cm3/1000 strokes : 1.5
tolerance mm +-: 0.7	Tolerance cm3/1000 str. +-: 1.5
Rated speed rpm : 500	Check tolerance
+	cm3/1000s. + : 1.5
SV travel mm : 3.0 +	
Tolerance mm +: 0.4	Rated speed rpm : 1320
Check + tolerance mm + : 0.7 +	Del. quantity cm3/1000 strokes : 25.0
Local differential and a second secon	Tolerance
SUPPLY PUMP PRESSURE CHARACTERISTIC +	cm3/1000 str. + : 15.0
†	Check tolerance
Rated speed rpm : 1150 + Supply pomp +	cm3/1000s. +-: 15.0
pressure bar : 5.3	Rated speed rpm : 1150
Tolerance bar +: 0.3	Del. quantity
+	cm3/1000 strokes : 85.5
Rated speed rpm : 500	Tolerance
Supply pomp + pressure ber : 2.9 +	cm3/1000 str. +-: 1.5 Check tolerance
Tolerance bar +: 0.3	cm3/1000s. + : 3.0
+	
OVERFLOW QUANTITY +	Rated speed rpm : 500
Rated speed rpm : 1150 +	Del. quantity cm3/1000 strokes : 77.5
Rated speed rpm : 1150 + Overflow quantity +	Tolerance
ccm/10s : 97.2 +	cm3/1000 str. + : 2.0
Tolerance	Check tolerance
ccm/10s +: 41.6	cm3/1000s. +-: 3.5
Check tolerance	Rated speed rpm : 200
ccm/10s + : 41.6	Del. quantity
+	cm3/1000 strokes : 82.0
Rated speed rpm : 500 +	Tolerance
Overflow quantity + ccm/10s : 63.8 +	cm3/1000 str. +-: 0.5 Check tolerance
Tolerance	cm3/1000s. +-: 2.5
ccm/10s +-: 22.2 +	
Charl Astronomy	MECHANICAL CHUTCE
Check tolerance + ccm/10s + : 22.2 +	MECHANICAL SHUTOFF
CVIII/ 103 TT . LC.C	Rated speed rpm : 1150
DELIVERY AND BREAKAWAY CHARACTERISTIC +	Del. quantity
+	cm3/1000 strokes : 1.5
Rated speed rpm : 1260	Tolerance cm3/1000 str. +-: 1.5
Del. quantity + cm2/1000 strokes : 57.0 +	Check tolerance
Tolerance +	cm3/1000s. + : 1.5
cm3/1000 str. + : 3.0 +	
Check tolerance	
cm3/1000s. +-: 4.5	IDLE DELIVERY
Rated speed rpm : 1370	
Del. quantity +	Rated speed rpm : 450
cm3/1000 strokes : 5.0	Del. quantity
Check tolerance + cm3/1000s. +-: 5.0 +	cm3/1000 strokes : 2.0 Tolerance
T	cm3/1000 str. +-: 2.0
Rated speed rpm : 1400 +	

Check tolerance cm3/1000s. +-: 2.0

# START TRANSITION

Rated speed rpm : 450

Del. quantity cm3/1000 strokes : 70.0

Tolerance

cm3/1000 str. + : 10.0

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 str. +-: 25.0

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +: +0,1 Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,3 Tolerance mm +-:+-0.2

# CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 50,1..58,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.08.94 Edition : ISO 4113 Test oil

: 0 460 426 149 Part no. Pump designation: VE6/12F1250R373-3

Customer-spec. information Customer : CDC : 6 BTA-590 Motor

# TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 Tolerance bar + :

Test lines : 1 680 750 000

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 840

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,85 Tolerance mm +:+0.02

Outlet

Prestroke

(as of UT) mm : 0.3Tolerance mm +:+0.02

Check

tolerance mm +-:+-0.04

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

Aneroid pressure

1000 'nFa

Setting mm 1.6 Tolerance mm + : 0.2

## SUPPLY PUMP PRESSURE

750 Rated speed rpm :

Aneroid pressure

1000

Supply pomp

pressure bar Tolerance bar +-: 0.3

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 750

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 82.5

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s.4.5

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 40.5

Tolerance

cm3/1000 str. +-:0.5

Check tolerance

cm3/1000s.4.5

# IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 6.0

Tolerance

2.0 cm3/1000 str. + :

Spread

cm3/1000 strokes : 5.5

Check tolerance cm3/1000s.	:	7.0	Aneroid pressure hPa Supply pomp	:	1000
		1	pressure bar Tolerance bar +-	:	2.4 0.3
FULL-LOAD SPEED R	EGULATIO	N I	OVERFLOW QUANTITY		
Rated speed rpm Pressure hPa	: 130	00 +	Rated speed rpm Aneroid pressure	:	1250
Del. quantity cm3/1000 strokes		58.0	hPa Overflow quantity	:	1000
Tolerance cm3/1000 str. +-		3.0	ccm/10s Tolerance	:	97.2
STARTING FUEL DEL		1	ccm/10s +-	:	41.6
		· +	Check tolerance		
Rated speed rpm Del. quantity		00 ‡	ccm/10s +-	:	41.6
cm3/1000 strokes Tolerance		P5.0 +	Overflow quantity	:	500
cm3/1000 str. +-	: 2	25.0	ccm/10s Tolerance	:	62.5
		+ +	ccm/10s +-	:	20.8
		+	Check tolerance		20.0
INJECTION-PUMP TE	ST SPECI	IFICATIONS I	ccm/10s +	:	20.8
		+	DELIVERY AND BREA	KAWAY	CHARACTERISTIC
TIMING DEVICE CHA	RACTERIS	STIC	Rated speed rpm	:	1300
Rated speed rpm Aneroid pressure	: 105	50	Aneroid pressure	•	1000
hPa	: 1	1000	Del. quantity	•	
SV travel mm	•	2.7	cm3/1000 strokes Tolerance	:	68.0
Tolerance mm +		0.4	cm3/1000 str. +- Check tolerance	:	3.0
tolerance mm +	:	0.7	cm3/1000s. +-	:	6.0
Rated speed rpm	: 60	o T	Rated speed rom Aneroid pressure	:	1330
Aneroid pressure hPa	: 1	1000	hPa	:	1000
SV travel mm		0.8	Del. quantity cm3/1000 strokes	:	35.0
Tolorance mm +- Check		0.4	Check tolerance cm3/1000s. +-	:	20.0
tolerance mm +	•	0.7	Rated speed rpm	:	1400
SUPPLY PUMP PRESS		+	Aneroid pressure hPa	:	1000
Rated speed rpm Aneroid pressure		+	Del. quantity cm3/1000 strokes	:	1.5
hPa Supply pomp	: 1	1000	Tolerance cm3/1000 str. +-	:	1.5
pressure bar		4.6	Check tolerance		1 5
Tolerance bar +-		0.3	cm3/1000s. +-	-	1.5
Rated speed rpm	: 50	00 +	Rated speed rpm	:	700

Aneroid pressure hPa : Del. quantity	450	L IDLE DELIVERY
cm3/1000 strokes : Tolerance	-	Rated speed rpm : 500
cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	0.5 4.5	Del. quantity cm3/1000 strokes : 2.0 Tolerance
Rated speed rpm :	4	cm3/1000 str. +-: 2.0 Check tolerance
Aneroid pressure	1000	cm3/1000s. + : 2.0
Del. quantity cm3/1000 strokes :	75.0	
Tolerance cm3/1000 str. +-:	1.5	
Check tolerance cm3/1000s. +-:	3.0	START TRANSITION
Rated speed rpm :	1050	Rated speed rpm : 420
Aneroid pressure hPa :	1000	Del. quantity cm3/1000 strokes : 40.0
Del. quantity cm3/1000 strokes : Tolerance	80.0	Tolerance cm3/1000 str. +-: 20.0
cm3/1000 str. +-: Check tolerance	1.5	Rated speed rpm : 240
cm3/1000s. +-:	3.0	Del. quantity cm3/1000 strokes : 100.0
Rated speed rpm : Aneroid pressure	5 <b>0</b> 0 -	Tolerance
hPa : Del. quantity	1000 -	
		l
cm3/1000 strokes : Tolerance	82.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : Tolerance cm3/1000 str. +- :	4.0	Dimension KF mm : 5,2 Tolerance mm + : +-0,2
cm3/1000 strokes : Tolerance cm3/1000 str. +- : Rated speed rpm : Aneroid pressure	4.0 - 750 -	Dimension KF mm : 5,2
cm3/1000 strokes: Tolerance cm3/1000 str. + :  Rated speed rpm: Aneroid pressure hPa: Del. quantity	4.0 750 1000	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6
cm3/1000 strokes: Tolerance cm3/1000 str. + :  Rated speed rpm: Aneroid pressure hPa:	4.0 - 750 -	Dimension KF mm : 5,2 Tolerance mm + : +0,2 MS1 dimension mm : 1,6
cm3/1000 strokes: Tolerance cm3/1000 str. + :  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance	4.0 750 1000 82.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET
cm3/1000 strokes: Tolerance cm3/1000 str. +:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	4.0 750 1000 82.5 0.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION
cm3/1000 strokes: Tolerance cm3/1000 str. +:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	4.0 750 1000 82.5 0.5 3.0	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever
cm3/1000 strokes: Tolerance cm3/1000 str. +:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/100Cs. +:  MECHANICAL SHUTOFF  Rated speed rpm: Aneroid pressure	4.0 750 1000 82.5 0.5 3.0	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8
cm3/1000 strokes: Tolerance cm3/1000 str. +:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:  MECHANICAL SHUTOFF  Rated speed rpm: Aneroid pressure hPa: Del. quantity	4.0 750 1000 82.5 0.5 3.0	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever
cm3/1000 strokes: Tolerance cm3/1000 str. +:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:  MECHANICAL SHUTOFF  Rated speed rpm: Aneroid pressure hPa:	4.0 750 1000 82.5 0.5 3.0	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever
cm3/1000 strokes: Tolerance cm3/1000 str. + :  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :  MECHANICAL SHUTOFF  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance	4.0 750 1000 82.5 0.5 3.0 1250 1000	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever position YB mm : 43,748,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30,07,96 Edition : ISO 4113 Test oil

: 0 460 494 362 Part no. Pump designation: VE4/9F2300R597-1

Customer-spec. information

Customer

: 1,9 L UD A3/B4 Motor

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

147 bar Tolerance bar +-:

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

# REMARKS

# BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,8 Tolerance mm + : + -0.02Outlet

# INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Aneroid pressure hPa 750 Setting mm 4.4 Tolerance mm +-: 0.1 Shutoff solenoid

#### SUPPLY PUMP PRESSURE

Volt

Rated speed rpm : 1250 Aneroid pressure 750 hPa Supply pomp 5.7 pressure bar Tolerance bar +-: 0.3 Shutoff solenoid 12 Volt

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

Rated speed rpm : 1250 Aneroid pressure 750 hPa Del. quantity cm3/1000 strokes : 50.5 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance

cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 7.5

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid Volt : 12	+ Shutoff solenoid Volt : 12
IDLE DELIVERY	PRESSURE DIFFERENCE
Rated speed rpm : 450 Del. quantity	Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes : 17.0 Tolerance	+ cm3/1000 strokes : -0.2 + Tolerance
cm3/1000 str. +-: 1.0 Spread	+ cm3/1000 str. +-: 0.1 + Shutoff solenoid
cm3/1000 strokes : 2.0 Shutoff solenoid	+ Volt : 12
Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
HIGH IDLE SETTING	Rated speed rpm : 1250 Del. quantity
Rated speed rpm : 550 Del. quantity	+ cm3/1000 strokes : -2.0 + Tolerance
cm3/1000 strokes : 17.0 Tolerance	+ cm3/1000 str. + : 0.1 + Shutoff solenoid
cm3/1000 str. +- : 1.0 Shutoff solenoid	+ Volt : 12
Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 2600 Pressure hPa : 750	Rated speed rpm : 2100 Aneroid pressure hPa : 750
Del. quantity cm3/1000 strokes : 11.0	+ Aneroid pressure + hPa : 750
Tolerance cm3/1000 str. +-: 2.0	SV travel mm : 8.3 Tolerance mm +-: 0.3
Shutoff solenoid Volt : 12	+ Tolerance mm +-: 0.3 + Check + tolerance mm +-: 0.8
SET GRADUATED STARTING DELIVERY	Shutoff solenoid Volt : 12
CONTROL LEVER, IDLE STOP	Rated speed rpm : 750
Reted speed rpm : 100 Del. quantity	Aneroid pressure hPa : 750
cm3/1000 strokes : 40.0 Tolerance	SV travel mm : 1.8
cm3/1000 str. + : 3.0 Shutoff solenoid	Tolerance mm +-: 0.3 Check
Volt : 12	tolerance mm + : 0.8 Shutoff solenoid
LOAD-DEPENDENT START OF DELIVERY	+ Volt : 12
SETTING	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
DELIVERY DIFFERENCE	+ Rated speed rpm : 2100 + Aneroid pressure
Rated speed rpm : 1250 Del. quantity	+ hPa : 750 + Supply pomp
cm3/1000 strokes : -5.5 Tolerance	+ pressure bar : 7.7 + Tolerance bar + : 0.3
cm3/1000 str. +: 1.0	+ Shutoff solenoid + Volt : 12

		ı	Ohaali dalamana	
Rated speed rpm	: 750	Ī	Check tolerance cm3/1000s. +-:	6.0
Aneroid pressure	. 150	Ţ	Shutoff solenoid	0.0
hPa	: 750	1	Volt :	12
Supply pomp		+		
pressure bar	: 4.6	+	Rated speed rpm :	2750
Tolerance bar +- Shutoff solenoid	: 0.3	†	Aneroid pressure	750
Volt	: 12	Ī	hPa : Del. quantity	750
1011	• '-	1	cm3/1000 strokes :	1.5
OVERFLOW QUANTITY		+	Tolerance	
		+	cm3/1000 str. +-:	1.5
	: 1250	†	Check tolerance	4 5
Aneroid pressure hPa	: 750	†	cm3/1000s. $+$ : Shutoff solenoid	1.5
overflow quantity	; 750	Ī	Volt :	12
ccm/10s	: 77.7	· I	vott .	16.
Tolerance	•	1	Rated speed rpm :	2100
ccm/10s +-	: 22.2	+	Aneroid pressure	
		+	hPa :	750
Check tolerance	: 34.7	†	Del. quantity	/7.0
ccm/10s +- Shutoff solenoid	: 34.7	1	cm3/1000 strokes : Tolerance	43.0
Volt	: 12	I	cm3/1000 str. + :	1.0
1010	•	1	Check tolerance	,,,
	: 2100	+	cm3/1000s. +-:	2.2
Aneroid pressure		+	Shutoff solenoid	
hPa	: 750	†	Volt :	12
Overflow quantity ccm/10s	: 97.2	†	Dated aread nom .	450
Tolerance	: 71.2	I	Rated speed rpm : Del. quantity	450
ccm/10s +-	: 41.6	I	cm3/1000 strokes :	40.2
	•	+	Tolerance	,,,,,
Check tolerance		+	cm3/1000 str. + :	3.0
ccm/10s +-	: 55.5	+	Check tolerance	
Shutoff solenoid	. 43	†	cm3/1000s. +-:	5.5
Volt	: 12	1	Shutoff solenoid Volt :	12
DELTVERY AND BREAK	AWAY CHARACTERISTIC	I	vott .	12
DESTREATE AND DIVERNO	MATERIAL STATES	1	Rated speed rpm :	1250
Rated speed rpm	: 2600	+	Aneroid pressure	
Aneroid pressure		+	hPa :	750
hPa	: 750	†	Del. quantity	FO F
Del. quantity cm3/1000 strokes	: 11.0	Ĩ	cm3/1000 strokes : Tolerance	50.5
Tolerance	. 11.0	I	cm3/1000 str. +-:	0.5
cm3/1000 str. +	: 2.0	1	Check tolerance	-
Check tolerance		+	cm3/1000s. +-:	2.2
cm3/1000s. +-	: 4.0	+	Shutoff solenoid	4.0
Shutoff solenoid	. 13	†	Volt :	12
Volt	: 12	Ī	Rated speed rpm :	700
Rated speed rpm	: 2400	I	Aneroid pressure	700
Aneroid pressure		1	hPa :	180
hPa	: 750	+	Tolerance	
Del. quantity	77 6	+	cm3/1000 str. +-:	0.5
cm3/1000 strokes	: 37.5	†	Check tolerance	0.5
Tolerance cm3/1000 str. +-	: 5.0	1	cm3/1000s. +-: Check tolerance	0.5
CIID/ TOOU BET.	. ,,,	I	cm3/1000s. +-:	0.5
		1		

Shutoff solenoid		+ Check tolerance
Volt	: 12	+ cm3/1000s. $+$ : 4.0
		→ Shutoff solenoid
Rated speed rpm	: 700	+ Volt : 12
Aneroid pressure		1
hPa	: 300	TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity	. 566	T TENENCE PERSON TO THE PERSON
cm3/1000 strokes	: 6.0	Rated speed rpm : 1250
Tolerance	. 0.0	Del. quantity
cm3/1000 str. +-	.: 1.0	+ cm3/1000 strokes : -2.0
Check tolerance	. 1.0	Tolerance
cm3/1000s. +-	-: 1.0	- cm3/1000 str. +-: 0.1
Shutoff solenoid	. 1.0	Check tolerance
Volt	: 12	
VOCE	• (2	+ Shutoff solenoid
		+ Volt : 12
		7 VOLL : 12
ELECTO CULTOFF		DEL TUEDY DIFFERENCE
ELECTR. SHUTOFF	U.E. CTOD	+ DELIVERY DIFFERENCE
CONTROL LEVER, ID	TE SIUP	Dated amond area (200
Dakad anand	. /50	Rated speed rpm : 1250
Rated speed rpm	: 450	Del. quantity
Del. quantity	. 4.5	+ cm3/1000 strokes : 1.5
cm3/1000 strokes	: 1.5	+ Tolerance
Tolerance	4 5	+ cm3/1000 str. + : 1.5
cm3/1000 str. +		- Check tolerance
Check tolerance		+ cm3/1000s. +: 1.5
cm3/1000s. +-	•: 1.5	+ Shutoff solenoid
Spread		+ Volt : 12
cm3/1000 strokes	: 5.0	†
<b>-</b>		+ PRESSURE DIFFERENCE
FULL-LOAD STOP CO	NTROL LEVER	†
	/50	+ Rated speed rpm : 1250
Rated speed rpm	: 450	+ Supply pomp
Del. quantity		+ pressure bar : −1.2
cm3/1000 strokes	: 1.5	+ Tolerance bar +-: 0.2
Tolerance		+ Shutoff solenoid
cm3/1000 str. +-	1.5	+ Volt : 12
Spread	<b>-</b> -	†
cm3/1000 strokes	: 5.0	+ TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance	<b>.</b> -	†
cm3/1000s. +-	1.5	+ Rated speed rpm : 1250
Spread	-	+ Tolerance mm + : 0.2
cm3/1000 strokes	: 5.0	+ Check
		+ tolerance mm +: 0.6
		+ Shutoff solenoid
		+ Volt : 12
		†
		5WIAUGT 040 270720
		+ EXHAUST-GAS RECIRCULATION
CHECKING LOAD-DEP		† n-4-1 4000
START OF DELIVERY	•	+ Rated speed rpm : 1000
A.M. M		+ Aneroid pressure
DELIVERY DIFFEREN	ICE	+ hPa : 750
_	4078	+ Del. quantity
Rated speed rpm	: 1250	+ cm3/1000 strokes : 35.0
Del. quantity		+ Tolerance
cm3/1000 strokes	: -9.0	+ cm3/1000 str. + : 1.0
Tolerance		+ Check tolerance
cm3/1000 str. +-	·: 2.0	+ cm3/1000s. +-: 3.0
		+

Shutoff solenoid

Volt : 12

START TRANSITION

Rated speed rpm : 380

Del. quantity cm3/1000 strokes :

41.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 45.0

Tolerance

cm3/1000 str. +-: 10.0

Shutoff solenoid

Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +-0,1
Dimension KF mm : 6,0
Tolerance mm + : +-0,2
Dimension MS mm : 1,2
Tolerance mm + : +-0,2

MICROSWITCH

SET

mm : 0,8...3,0

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,6..41,6

Control lever

position YB mm : 50,4..53,3

Refer to Service : adjustment instru See microcard(s) !	
Edition Test oil	: 22.06.94 : ISO 4113
Part no. Pump designation	: 0 460 494 373 : VE4/9F2300R597-4
Customer-spec. in Customer Motor	formation : VW : 1,9 L UD A3
TEST BENCH REQUIR	EMENTS
Calibrating-oil return temperature °C Tolerance °C +-	: 45 : 1
Overflow restriction mm	
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 000
Opening pressure bar Tolerance bar +-	: 147 : 3
Test lines	: 1 680 750 000
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 840
REMARKS	

Rated speed rpm Aneroid pressure	: 1250 : 750
hPa	; 750
Setting mm Tolerance mm + Shutoff solenoid	: 4.4 : 0.1
Volt	: 12
SUPPLY PUMP PRESSU	JRE
Rated speed rpm Aneroid pressure	: 1250
hPa	: 750
Supply pomp pressure bar	: 5.7
Tolerance bar +- Shutoff solenoid	: 0.3
Volt	: 12
FULL-LOAD DELIVERY	WITH BOOST PRESSURE
Rated speed rpm	: 1250
Aneroid pressure hPa	: 750
Del. quantity cm3/1000 strokes	: 50.5
J 1000 01. 1	: 0.5
Spread cm3/1000 strokes	: 2.5
Check tolerance cm3/1000S.	: 3.0
Shutoff solenoid Volt	: 12
	· -
FULL-LOAD DELIV. V	VITHOUT BOOST PRESSURE
Check tolerance cm3/1000s.	: 3.0
HOUSING-FIXED IDLE RESIDUAL QUANTITY	
Rated speed rpm	: 550
Del. quantity cm3/1000 strokes Tolerance	: 7.5
cm3/1000 str. +-	: 0.5
Shutoff solenoid Volt	: 12
IDLE DELIVERY	
Rated speed rpm	: 450
Del. quantity cm3/1000 strokes	: 17.0

Tolerance		† Tolerance
cm3/1000 str. +-	: 1.0	+ cm3/1000 str. $+-$ : 0.1
Spread		+ Shutoff solenoid
cm3/1000 strokes	: 2.0	+ Volt : 12
Shutoff solenoid		
Volt	: 12	TIMING-DEVICE TRAVEL DIFFERENCE
1000	• 12	THING DEVICE THAVEE DITTERENCE
HIGH IDLE SETTING		Rated speed rpm : 1250
HIGH IDEE SELLING		+ Del. quantity
Rated speed rpm	: 500	- cm3/1000 strokes : -2.0
Del. quantity	. 500	Tolerance
cm3/1000 strokes	: 17.0	- cm3/1000 str. +-: 0.1
	: 17.0	
Tolerance	. 4.0	+ Shutoff solenoid
cm3/1000 str. +	: 1.0	† Volt : 12
Shutoff solenoid	45	†
Volt	: 12	
		+ INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED R	EGULATION	
	A 4 B B	† TIMING DEVICE CHARACTERISTIC
Rated speed rom	: 2600	†
Pressure hPa	: 750	+ Rated speed rpm : 2100
Del. quantity		+ Aneroid pressure
cm3/1000 strokes	: 11.0	+ hPa : 750
Tolerance		+
cm3/1000 str. +-	: 2.0	+ SV travel mm : 8.3
Shutoff solenoid		+ Tolerance mm +-: 0.3
Volt	: 12	+ Check
		† tolerance mm +-: 0.8
		→ Shutoff solenoid
SET GRADUATED STA	RTING DELIVERY	+ Volt : 12
CONTROL LEVER, ID	LE STOP	<del>}</del>
•		+ Rated speed rpm : 750
Rated speed rom	: 100	+ Aneroid pressure
Del. quantity	· · · · · · · · · · · · · · · · · · ·	. hPa : 750
cm3/1000 strokes	: 40.0	+
Tolerance		+ SV travel mm : 1.8
cm3/1000 str. +-	: 3.0	+ Tolerance mm +-: 0.3
Shutoff solenoid		+ Check
Volt	: 12	tolerance mm + : 0.8
1020		+ Shutoff solenoid
		+ Volt : 12
LOAD-DEPENDENT ST.	ART OF DELIVERY	1.
SETTING	THE VI VECTATIVE	SUPPLY PUMP PRESSURE CHARACTERISTIC
061 121TG		T COLLECTION THEODORE CHARACTERIZATION
DELIVERY DIFFEREN	CF	Rated speed rpm : 2100
NEFTARILI NELLEVELA	V	Aneroid pressure
Rated speed rpm	• 1250	hPa : 750
Del. quantity	• 1230	Supply pomp
cm3/1000 strokes	: -5.5	pressure bar : 7.7
Tolerance	• 5.5	Tolerance bar +: 0.3
cm3/1000 str. +-	: 1.0	Shutoff solenoid
Shutoff solenoid		Volt : 12
Volt	: 12	12
YULL	• 16	Rated speed rpm : 750
DOECCIDE NTEEDEN	re .	Aneroid pressure
PRESSURE DIFFEREN	UE	hPa : 750
Rated speed rpm	: 1250	Supply pomp
Del. quantity	• 1630	pressure bar : 4.6
cm3/1000 strokes	: -0.2	Tolerance bar +: 0.3
CHIST TOOU STRUKES	0.2	T loterance par U.J
		Т

Shutoff solenoid		_		+	Del. quantity		
Volt	:	12	•	<u> </u>	cm3/1000 strokes Tolerance	:	1.5
OVERFLOW QUANTITY	,			Ŧ	cm3/1000 str. +	:	1.5
Dotted aread are		1250	•	†	Check tolerance cm3/1000s. +-		1.5
Rated speed rpm Aneroid pressure	•	1230	•	I	cm3/1000s. +- Shutoff solenoid	•	1.7
hPa	:	750		+	Volt	:	12
Overflow quantity ccm/10s	<b>.</b>	77.7		İ	Rated speed rpm	:	2100
Tolerance	•			1	Aneroid pressure	•	
ccm/10s +-	- :	22.2		+	hPa	:	750
Check tolerance				I	Del. quantity cm3/1000 strokes	:	43.0
ccm/10s +	- :	34.7		+	Tolerance		
Shutoff solenoid Volt		12		İ	cm3/1000 str. +- Check tolerance	:	1.0
VOCC	•			Ŧ	cm3/1000s. +	:	2.2
Rated speed rpm	:	2100		†	Shutoff solenoid		42
Aneroid pressure hPa	:	750		1	Volt	:	12
Overflow quantity	, .			+	Rated speed rpm	:	450
ccm/10s	:	97.2		†	Del. quantity cm3/1000 strokes		40.2
Tolerance +	- :	41.6		I	Tolerance	•	40.2
				+	cm3/1000 str. +	:	3.0
Check tolerance ccm/10s +		55.5		1	Check tolerance cm3/1000s. +-	•	5.5
Shutoff solenoid	•			+	Shutoff solenoid	•	
Volt	:	12		†	Volt	:	12
DELIVERY AND BREA	KAWA	AY CHARAC	TERISTIC	‡	Rated speed rpm	:	1250
			TERISTIC	† †	Aneroid pressure	:	
Rated speed rpm	KAW/		TERISTIC	† + + +	Aneroid pressure hPa	: :	1250 750
Rated speed rpm Aneroid pressure hPa			TERISTIC	† † † † †	Aneroid pressure hPa Del. quantity cm3/1000 strokes	:	
Rated speed rpm Aneroid pressure hPa Del. quantity	:	2600 750	TERISTIC	+ + + + + +	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	:	750 50.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: :	2600 750 11.0	TERISTIC	+ + + + + + +	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	750 50.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	: :	2600 750	TERISTIC	<del>*</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	750 50.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: : :	2600 750 11.0	TERISTIC	<del>*                                    </del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	750 50.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	: : :	2600 750 11.0 2.0 4.0	TERISTIC	<del>*                                    </del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	:	750 50.5 0.5 2.2
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: : :	2600 750 11.0 2.0	TERISTIC	<del>*                                    </del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	:	750 50.5 0.5 2.2
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt Rated speed rpm	: : :	2600 750 11.0 2.0 4.0	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	:	750 50.5 0.5 2.2
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt Rated speed rpm Aneroid pressure	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance	: : : : : : : : : : : : : : : : : : : :	750 50.5 0.5 2.2 12 700 180
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750	TERISTIC	<del>************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance	: : : : : : : : : : : : : : : : : : : :	750 50.5 0.5 2.2 12 700 180 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : : : : : : : : : : : : : : :	750 50.5 0.5 2.2 12 700 180
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance	: : : : : : : : : : : : : : : : : : : :	750 50.5 0.5 2.2 12 700 180 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750 37.5 5.0	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750 37.5	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Check tolerance cm3/1000s. +-	: : : : : : : : : : : : : : : : : : : :	750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750 37.5 5.0	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm		750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750 37.5 5.0 6.0	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure		750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5 12
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750 37.5 5.0 6.0 12	TERISTIC	<del>*******************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Del. quantity		750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5 12 700 300
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	2600 750 11.0 2.0 4.0 12 2400 750 37.5 5.0 6.0	TERISTIC	<del>*************************************</del>	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Aneroid pressure hPa		750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5 12

Tolerance +	Del. quantity
cm3/1000 str. +: 1.0 +	cm3/1000 strokes : -2.0
Check tolerance	Tolerance
cm3/1000s. + : 1.0	cm3/1000 str. +-: 0.1
Shutoff solenoid	Check tolerance
Volt : 12	cm3/1000s. +-: 0.1
voct : 12 7	Shutoff solenoid
Ť	
†	Volt : 12
ELECTR. SHUTOFF	DELIVERY DIFFERENCE
CONTROL LEVER, IDLE STOP	
+	Rated speed rpm : 1250
Rated speed rpm : 450 +	Del. quantity
Del. quantity	cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5	Tolerance
Tolerance	cm3/1000 str. +-: 1.5
cm3/1000 str. +: 1.5	Shutoff solenoid
Check tolerance	Volt : 12
cm3/1000s. +: 1.5	1011
Spread	PRESSURE DIFFERENCE
cm3/1000 strokes : 5.0	INCOORE NTILENEINGE
CHIDA LONG STUCKES : 3.0	Botod spood non . 1350
FULL LOAD STOP CONTROL LEVER	Rated speed rpm : 1250
FULL-LOAD STOP CONTROL LEVER	Supply pomp
t t	pressure bar : -1.2
Rated speed rpm : 450 +	Tolerance bar + : 0.2
Del. quantity +	Shutoff solenoid
cm3/1000 strokes : 1.5 +	Volt : 12
Tolerance +	
cm3/1000 str. +-: 1.5 +	TIMING-DEVICE TRAVEL DIFFERENCE
Spread	
cm3/1000 strokes : \$.0	Rated speed rpm : 1250
	·
Check tolerance +	Tolerance mm +- · · · · · 12
Check tolerance	Tolerance mm + : 0.2
cm3/1000s. +: 1.5	Check
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.6
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.5 Shutoff solenoid
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.6
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.5 Shutoff solenoid
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.5 Shutoff solenoid
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION Rated speed rpm : 1000
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT	Check tolerance mm +-: 0.5 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0	Check tolerance mm +-: 0.5 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT	Check tolerance mm +-: 0.5 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance
cm3/1000s. +: 1.5  Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0
cm3/1000s. +: 1.5  Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance
cm3/1000s. +: 1.5  Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0
cm3/1000s. +: 1.5  Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity
cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 41.0
cm3/1000s. +: 1.5  Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt: 12  TIMING-DEVICE TRAVEL DIFFERENCE	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 41.0 Tolerance
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 41.0
cm3/1000s. +: 1.5  Spread cm3/1000 strokes: 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm: 1250 Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt: 12  TIMING-DEVICE TRAVEL DIFFERENCE	Check tolerance mm +-: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 41.0 Tolerance

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 45.0

Tolerance

cm3/1000 str. +-: 10.0

Shutoff solenoid

Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,2

Tolerance mm +:+0.2

MICROSWITCH

SET

mm : 0,8...3,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.08.95 Edition : ISO 4113 Test oil

: 0 460 494 414 Part no. Pump designation: VE4/9F2300R597-5

Customer-spec. information

Customer : VW

: 1,9 L UD A3 / B4 Motor

Power KW 55.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

bar Tolerance bar + :

Test lines : 1 680 750 000

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Aneroid pressure 750 4.4 Setting mm

Tolerance mm +: 0.1 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

1250 Rated speed rpm :

Aneroid pressure

750 hPa Supply pomp

pressure bar 5.7 Tolerance bar +-: 0.3

Shutoff solenoid Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250 Aneroid pressure hPa 750 Del. quantity cm3/1000 strokes : 50.5 Tolerance cm3/1000 str. +-:Spread cm3/1000 strokes : 2.5 Check tolerance

cm3/1000s. 3.0

Shutoff solenoid

Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance

cm3/1000s. 3.0 :

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

550 Rated speed rpm : Del. quantity cm3/1000 strokes : 7.5

Tolerance cm3/1000 str. + :Shutoff solenoid

12 Volt

0.5

#### IDLE DELIVERY

450 Rated speed rpm : Del. quantity

cm3/1000 strokes: 17.0

Talamana		1	Talananaa	
Tolerance cm3/1000 str. +-	•	1.0	Tolerance cm3/1000 str. +-:	0.1
Spread	•	1.0	Shutoff solenoid	U. 1
cm3/1000 strokes	•	2.0		12
Shutoff solenoid	•	7	Volt :	12
		12 I	TIMING DEVICE TOAVEL	D.T. E.E. E.D.E.M.C.E.
Volt	•	12 +	TIMING-DEVICE TRAVEL	DIFFERENCE
HIGH IDLE SETTING		T	Rated speed rpm :	1250
UTOU TAFE SELLTIAG		Ţ		1230
Batad assad was	: 50	n T	Del. quantity cm3/1000 strokes :	-2.0
Rated speed rpm	. 56	†	Tolerance	-2.0
Del. quantity	. 1	7.0		0.1
cm3/1000 strokes	: 1	··· †	cm3/1000 str. +:	0.1
Tolerance		1.0	Shutoff solenoid	12
cm3/1000 str. +		1.0	Volt :	12
Shutoff solenoid	_	12 I		
Volt	•	. †	TALLECTION DUMP TECT	COUCTETCATIONS
EULL - LOAN COEEN DE	ECULATIO	u. T	INJECTION-PUMP TEST	SECTATIONS
FULL-LOAD SPEED RI	EGOLATIC	T	TIMING DEVICE CHARAC	TEDICTIC
Dated aread non	: 260	n t	ITHING DEATTE CHARAC	IERTOITC
Rated speed rpm Pressure hPa		750	Cotod anada ana	2100
	ě	1 70	Rated speed rpm :	2100
Del. quantity cm3/1000 strokes	. 1	1.0	Aneroid pressure hPa :	750
Tolerance	• '	†	ura :	100
cm3/1000 str. +-	•	2.0	SV travel mm :	8.3
Shutoff solenoid	•	2.0	Tolerance mm +:	0.3
Volt	•	12 I	Check	0.5
VOLL	•	' <sup>2</sup> T	tolerance mm +:	0.8
		T	Shutoff solenoid	0.0
SET GRADUATED STAI	DITANC NE	TVED		12
		TTACKI	Volt :	12
CONTROL LEVER, IN	TE SINE	Ť	Dotted around nom	750
Dated aread non	: 10	m T	Rated speed rpm : Aneroid pressure	730
Rated speed rpm Del. quantity		~ T	hPa :	750
cm3/1000 strokes	. /	0.0	iira .	750
Tolerance	• 4	T	SV travel mm :	1.8
cm3/1000 str. +-		3.0	Tolerance mm +:	0.3
Shutoff solenoid	•	7.0 T	Check	0.5
		12 I	tolerance mm + :	0.8
Volt	•	T	Shutoff solenoid	0.0
		I	Volt :	12
LOAD-DEPENDENT ST	ADT OF S	I THERY		12
SETTING	MRI OF L	I	SUPPLY PUMP PRESSURE	: CHADACTEDISTIC
SELLTING		I	SOFFET FORF FRESSORE	. UNANACIENTOTIC
DELIVERY DIFFEREN	CE	I	Rated speed rpm :	2100
DEFTACK! DILLEGEN	UL	I	Aneroid pressure	£100
Rated speed rpm	. 125	I	hPa :	750
Del. quantity	• 162		Supply pomp	150
cm3/1000 strokes		5.5	pressure bar :	7.7
Tolerance	•	1	Tolerance bar +-:	0.3
cm3/1000 str. +-	•	1.0	Shutoff solenoid	0.0
Shutoff solenoid	•	1	Volt :	12
Volt	•	12		
· ~ • •	•	1	Rated speed rpm :	750
PRESSURE DIFFEREN	CF.	1	Aneroid pressure	
		1	hPa :	750
Rated speed rpm	: 125	50 ±	Supply pomp	
Del. quantity		- -	pressure bar :	4.6
cm3/1000 strokes	: -	0.2	Tolerance bar +-:	0.3
THE THE PER COLUMN	•	1		- / <del>-</del>
		•		

Shutoff solenoid		+	Del. quantity	
Volt	: 12	+	cm3/1000 strokes :	1.5
		+	Tolerance	
OVERFLOW QUANTITY		+	cm3/1000 str. +-:	1.5
		+	Check tolerance	
Rated speed rpm	: 1250	+	cm3/1000s. +-:	1.5
Aneroid pressure		+	Shutoff solenoid	
hPa	: 750	†	Volt :	12
Overflow quantity	77 7	, <del>†</del>	5	24.00
ccm/10s	: 77.7	†	Rated speed rpm :	2100
Tolerance +-			Aneroid pressure	750
ccm/ ius —	: 22.2	T	hPa :	750
Chark talanana		Ť	Del. quantity cm3/1000 strokes :	/7.0
Check tolerance ccm/10s +-	: 34.7		Tolerance	43.0
Shutoff solenoid	, 34.7	Ţ	cm3/1000 str. +-:	1.0
Volt	: 12	· I	Check tolerance	1.0
VOCC	. 12	I	cm3/1000s. +-:	2.2
Rated speed rpm	: 2100	$\mathbf{I}$	Shutoff solenoid	2.2
Aneroid pressure	. 2100	<b>1</b>	Volt :	12
hPa	: 750	$_{\perp}$		16
Overflow quantity		1	Rated speed rpm :	450
ccm/10s	: 97.2	·	Del. quantity	
Tolerance		+	cm3/1000 strokes :	40.2
ccm/10s +-	: 41.6	· <del>}</del>	Tolerance	
		+	cm3/1000 str. +-:	3.0
Check tolerance		+	Check tolerance	
ccm/10s +-	: 55.5	+	cm3/1000s. + :	5.5
Shutoff solenoid		+	Shutoff solenoid	
Volt	: 12	+	Volt :	12
		ì		
COLUMN AND DOCA	(ALIAN ALIADA	-	Ph. I. I	4250
DELIVERY AND BREA	KAWAY CHARA	CTERISTIC	Rated speed rpm :	1250
		CTERISTIC	Aneroid pressure	
Rated speed rpm	KAWAY CHARA	CTERISTIC	Aneroid pressure hPa :	1250 750
Rated speed rpm Aneroid pressure	: 2600	‡	Aneroid pressure hPa : Del. quantity	750
Rated speed rpm Aneroid pressure hPa		‡	Aneroid pressure hPa : Del. quantity cm3/1000 strokes :	
Rated speed rpm Aneroid pressure hPa Del. quantity	: 2600 : 750	† †	Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	750 50.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 2600	† †	Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-:	750
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 2600 : 750 : 11.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	750 50.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2600 : 750 : 11.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	750 50.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 2600 : 750 : 11.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance	750 50.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid	750 50.5 0.5 2.2
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2600 : 750 : 11.0 : 2.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt : Rated speed rpm :	750 50.5 0.5 2.2
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure	750 50.5 0.5 2.2 12 700
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 2600 : 750 : 11.0 : 2.0 : 4.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000S. + : Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa :	750 50.5 0.5 2.2
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance	750 50.5 0.5 2.2 12 700
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +-:	750 50.5 0.5 2.2 12 700
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +-: Check tolerance	750 50.5 0.5 2.2 12 700 180 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	750 50.5 0.5 2.2 12 700
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Check tolerance	750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- :	750 50.5 0.5 2.2 12 700 180 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5 : 5.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid	750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- :	750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5 : 5.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid	750 50.5 0.5 2.2 12 700 180 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5 : 5.0 : 6.0 : 12		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure	750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5 12
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5 : 5.0 : 6.0		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance	750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5 : 5.0 : 6.0 : 12		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity	750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5 12 700 300
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance	: 2600 : 750 : 11.0 : 2.0 : 4.0 : 12 : 2400 : 750 : 37.5 : 5.0 : 6.0 : 12		Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance cm3/1000s. +- : Check tolerance	750 50.5 0.5 2.2 12 700 180 0.5 0.5 0.5 12

Tolerance +	Del. quantity
cm3/1000 str. +-: 1.0	cm3/1000 strokes : -2.0
Check tolerance	Tolerance
cm3/1000s. +-: 1.0	cm3/1000 str. +-: 0.1
Shutoff solenoid	Check tolerance
Volt : 12 +	cm3/1000s. +-: 0.1
+	Shutoff solenoid
+	Volt : 12
+	
ELECTR. SHUTOFF +	DELIVERY DIFFERENCE
CONTROL LEVER, IDLE STOP	
1	Rated speed rpm : 1250
Rated speed rpm : 450	Del. quantity
Del. quantity	cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5	Tolerance
Tolerance	cm3/1000 str. + : 1.5
cm3/1000 str. +-: 1.5 +	Check tolerance
Check tolerance	cm3/1000s. + : 1.5
cm3/1000s. +-: 1.5 +	Shutoff solenoid
Spread	Volt : 12
cm3/1000 strokes : 5.0	• • •
	PRESSURE DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	I WEDDOWE DITTENENCE
TOLL LOAD STOP CONTROL LEVER	Rated speed rpm : 1250
7.4	• • • • • • • • • • • • • • • • • • •
Rated speed rpm : 450 +	Supply pomp
Del. quantity +	pressure bar : −1.2
cm3/1000 strokes : 1.5 +	Tolerance bar +-: 0.2
Tolerance +	Shutoff solenoid
cm3/1000 str. + : 1.5	Volt : 12
Spread	. , , ,
cm3/1000 strokes : 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance	THING DEVICE TRAVEL DITTERENCE
	Rated speed rpm : 1250
	Rated Speed from ' 1230
cm3/1000s. +-: 1.5	•
Spread	Tolerance mm +-: 0.2
	Tolerance mm + : 0.2 Check
Spread	Tolerance mm + : 0.2 Check tolerance mm + : 0.6
Spread	Tolerance mm + : 0.2 Check tolerance mm + : 0.6 Shutoff solenoid
Spread	Tolerance mm + : 0.2 Check tolerance mm + : 0.6
Spread	Tolerance mm + : 0.2 Check tolerance mm + : 0.6 Shutoff solenoid
Spread	Tolerance mm + : 0.2 Check tolerance mm + : 0.6 Shutoff solenoid
Spread	Tolerance mm + : 0.2 Check tolerance mm + : 0.6 Shutoff solenoid
Spread cm3/1000 strokes : 5.0	Tolerance mm + : 0.2 Check tolerance mm + : 0.6 Shutoff solenoid Volt : 12
Spread cm3/1000 strokes : 5.0 CHECKING LOAD-DEPENDENT	Tolerance mm + : 0.2 Check tolerance mm + : 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION
Spread cm3/1000 strokes : 5.0	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000
Spread cm3/1000 strokes : 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure
Spread cm3/1000 strokes : 5.0 CHECKING LOAD-DEPENDENT	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750
Spread cm3/1000 strokes : 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity
Spread cm3/1000 strokes : 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0
Spread cm3/1000 strokes : 5.0  CHECKING LOAD—DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance
Spread cm3/1000 strokes : 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0
Spread cm3/1000 strokes : 5.0  CHECKING LOAD—DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 4.0	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0
CHECKING LOAD—DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 4.0	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid
CHECKING LOAD—DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  START TRANSITION
CHECKING LOAD—DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPe : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380
Spread cm3/1000 strokes : 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity
CHECKING LOAD—DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPe : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380
Spread cm3/1000 strokes : 5.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance mm +: 0.2 Check tolerance mm +: 0.6 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 750 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity

Tolerance

cm3/1000 str. +-:10.0

Shutoff solenoid

12 Volt

180 Rated speed rpm :

Del. quantity cm3/1000 strokes : 45.0

Tolerance

cm3/1000 str. +-: 10.0

Shutoff solenoid

12 Volt

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm Tolerance mm + : +-0,1 Dimension KF mm : 6,0 Toterance mm +-: +-0,2 Dimension MS mm : 1,2 Tolerance mm +-: +-0,2

CONTROL LEVER POSITION SET

Control lever

: 37,6..41,6 position YA mm

Control lever

position YB mm : 49,9..53,3

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.02.96 Test oil : ISO 4113

Part no. : 0 460 494 404 Pump designation : VE4/9F2150R637-1

Customer-spec. information

Customer : NISSAN-MISA

Motor : GX-3 Power KW : 53.0

# TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +- : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Cutside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 3.2
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200 Supply pomp

Tolerance bar +: 0.3
Shutoff solenoid

Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# IDLE SETTING

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 str. +-: 3.0
Shutoff solenoid
Volt : 12

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity	+ Shutoff solenoid
cm3/1000 strokes : 60.0	† Volt : 12
Tolerance	† Bodad and June (200
cm3/1000 str. + : 15.0	+ Rated speed rpm : 600 + Overflow quantity
Volt : 12	+ ccm/10s : 63.8
• 12	Tolerance
	+ ccm/10s + : 22.2
	+
	+ Check tolerance
THE PETALL BUILD THAT ADDRESS ATTALIA	+ ccm/10s + : 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	† Volt : 12
THING DEVICE CHARACTERIBLE	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2150	
, ,	+ Rated speed rpm : 2500
SV travel mm : 9.2	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 15.0
Check	+ Tolerance
tolerance mm +: 0.7	+  cm3/1000  str. + : 3.0
Shutoff solenoid	Check tolerance
Volt : 12	+ cm3/1000s. +-: 4.5 + Shutoff solenoid
Rated speed rpm : 900	+ Volt : 12
rated speed (pill : 900	I vott . 12
SV travel mm : 1.2	Rated speed rpm : 2350
Tolerance mm +: 0.4	+ Del. quantity
Check	+ cm3/1000 strokes : 33.3
tolerance mm +-: 0.7	† Tolerance
Shutoff solenoid	+ cm3/1000 str. + : 4.0
Yolt : 12	+ Check tolerance
CURRY NUMB PRESSURE CHARACTERISTIC	+ cm3/1000s. + : 5.5
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2150	I vott . 12
Supply pomp	Rated speed rpm : 2700
pressure bar : 8.7	+ Del. quantity
Tolerance bar +-: 0.3	- cm3/1000 strokes : 2.5
Shutoff solenoid	† Tolerance
Volt : 12	+ cm3/1000 str. +-: 2.5
	+ Check tolerance
Rated speed rpm : 900	+ cm3/1000s. +-: 2.5
Supply pomp pressure bar : 5.0	+ Shutoff solenoid + Volt : 12
pressure bar : 5.0 Tolerance bar +-: 0.3	I voi: 12
Shutoff solenoid	Rated speed rpm : 900
Volt : 12	+ Del. quantity
	- cm3/1000 strokes : 42.2
OVERFLOW QUANTITY	+ Tolerance
	+  cm3/1000  str. + : 1.5
Rated speed rpm : 2150	+ Check tolerance
Overflow quantity	+ cm3/1000s. +-: 2.5
ccm/10s : 97.2	+ Shutoff solenoid + Volt : 12
Tolerance	† Volt : 12
COM/ TUS TT . 41.0	Rated speed rpm : 1200
Check tolerance	+ Del. quantity
ccm/10s +-: 41.6	+ cm3/1000 strokes : 43.2
	+
	,

Talamana	0
Tolerance	Spread
cm3/1000 str. + 1.5	cm3/1000 strokes : 5.0
Check tolerance +	· Check tolerance
cm3/1000s. +=: 2.5 +	cm3/1000s. +-: 1.5
Shutoff solenoid +	Spread
Volt : 12 +	cm3/1000 strokes : 5.0
1	
Rated speed rpm : 1800	IDLE DELIVERY
	. INTE DELIVER!
Del. quantity	Dutad an advance 000
cm3/1000 strokes : 44.3	Rated speed rpm : 800
Tolerance +	Del. quantity
cm3/1000 str. + : 1.5	- cm3/1000 strokes : 2.5
Check tolerance	· Tolerance
cm3/1000s. $+$ : 2.5	- cm3/1000 str. +-: 2.5
Shutoff solenoid +	· Check tolerance
Volt : 12 →	- cm3/1000s. +-: 2.5
` }	- Shutoff solenoid
Rated speed rpm : 600	· Volt : 12
Del. quantity	
cm3/1000 strokes : 41.0	Rated speed rpm : 500
Tolerance	, ,
cm3/1000 str. + : 1.5	· Del. quantity · cm3/1000 strokes : 1.5
Check tolerance	Tolerance
cm3/1000s. + : 2.5	- cm3/1000 str. + : 1.5
Shutoff solenoid +	Check tolerance
Volt : 12 +	- cm3/1000s. + : 1.5
+	- Shutoff solenoid
Rated speed rpm : 2150	· Volt : 12
Del. quantity +	•
cm3/1000 strokes : 44.5	•
Tolerance	•
cm3/1000 str. +-: 0.5	
Check tolerance	
	•
cm3/1000s. +: 1.3	07407 7044077704
Shutoff solenoid +	- START TRANSITION
Volt : 12 +	
†	- Rated speed rpm : 400
†	- Del. quantity
+	- cm3/1000 strokes : 45.0
ELECTR. SHUTOFF +	- Tolerance
CONTROL LEVER, IDLE STOP	- cm3/1000 str. +-: 20.0
	Churtaff aalamaid
	- Shutoff solenoid
Rated speed rpm : 375	- Volt : 12
Rated speed rpm : 375  Del. quantity	
Del. quantity +	
Del. quantity cm3/1000 strokes : 1.5	- Volt : 12 - -
Del. quantity cm3/1000 strokes : 1.5 Tolerance	- Volt : 12 - - - Rated speed rpm : 270
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5	- Volt : 12 - - Rated speed rpm : 270 - Del. quantity
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance	- Volt : 12 - - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	- Volt : 12 - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0 - Tolerance
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	- Volt : 12 - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0 - Tolerance - cm3/1000 str. +- : 20.0
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	- Volt : 12 - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0 - Tolerance - cm3/1000 str. +- : 20.0 - Shutoff solenoid
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0	- Volt : 12 - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0 - Tolerance - cm3/1000 str. +- : 20.0
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	- Volt : 12 - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0 - Tolerance - cm3/1000 str. +- : 20.0 - Shutoff solenoid
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 270  Pel. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375	- Volt : 12 - Rated speed rpm : 270 - Del. quantity - cm3/1000 strokes : 70.0 - Tolerance - cm3/1000 str. +- : 20.0 - Shutoff solenoid
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity	Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375	Rated speed rpm : 270  Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 270  Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +-: +-0,1
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 270  Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3

Dimension MS mm : 1,2 Tolerance mm +- : +-0,2 TLA travel mm : 6,5

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 35,1..39,1

Control lever position YB mm : 56,9..68,1

BOSCH INJ. PUMP T	EST SPECIFICATIONS
Note remarks	
Refer to Service adjustment instru See microcard(s)	
Edition Test oil	: 06.09.96 : ISO 4113
Part no. Pump designation	: 0 460 426 152 : VE6/12F1250R381
Customer-spec. in Customer Motor	iformation : CDC : 68T- 5.9 IND.
TEST BENCH REQUIR	REMENTS
Calibrating-oil return temperature °C Tolerance °C	: 45 ·: 1
Overflow restriction mm	: 0.55
Inlet press. bar Tolerance bar +	: 0.35 -: 0.05
Test nozzle holde assembly	: : 1 688 901 027
Opening pressure bar Tolerance bar +	: 250 -: 3
Test lines	: 1 680 750 000
Outside diameter	: 6.00
x inside diameter x length mm	2.00 : 840

INJECTION PUMP SET TIMING DEVICE TRAV Rated speed rpm Setting mm	TIN /EL :	750 3.6 0.2 12 750 3.8 0.3	
TIMING DEVICE TRAV Rated speed rpm Setting mm Tolerance mm +- Shutoff solenoid Volt SUPPLY PUMP PRESSU Rated speed rpm Supply pomp pressure bar Tolerance bar +- Shutoff solenoid	/EL : : :	750 3.6 0.2 12 750 3.8	
Rated speed rpm  Setting mm  Tolerance mm + Shutoff solenoid Volt  SUPPLY PUMP PRESSU  Rated speed rpm Supply pomp pressure bar  Tolerance bar + Shutoff solenoid	: : :	3.6 0.2 12 750 3.8	
Setting mm Tolerance mm + Shutoff solenoid Volt SUPPLY PUMP PRESSU Rated speed rpm Supply pomp pressure bar Tolerance bar + Shutoff solenoid	: :	3.6 0.2 12 750 3.8	
Tolerance mm + Shutoff solenoid Volt  SUPPLY PUMP PRESSU Rated speed rpm Supply pomp pressure bar Tolerance bar + Shutoff solenoid		0.2 12 750 3.8	
Shutoff solenoid Volt SUPPLY PUMP PRESSU Rated speed rpm Supply pomp pressure bar Tolerance bar +- Shutoff solenoid		12 750 3.8	
SUPPLY PUMP PRESSURATED Supply pomp pressure bar Tolerance bar +- Shutoff solenoid		750 3.8	
Rated speed rpm Supply pomp pressure bar Tolerance bar +- Shutoff solenoid		3.8	
Supply pomp pressure bar Tolerance bar +- Shutoff solenoid	:	3.8	
Tolerance bar +- Shutoff solenoid	:		
νοιι	i	12	
FULL-LOAD DELIV. W	VI TH	HOUT BOOST	PRESS
Rated speed rpm	:	1100	
Del. quantity cm3/1000 strokes	:	64.0	
Tolerance cm3/1000 str. +-	:	0.5	
Spread cm3/1000 strokes	:	4.5	
Shutoff solenoid Volt	:	12	
IDLE SETTING			
	:	345	
Del. quantity cm3/1000 strokes	:	12.0	
Tolerance cm3/1000 str. +	:	3.0	
Shutoff solenoid Volt	:	12	
Spread cm3/1000 strokes	:	7.0	
Check tolerance cm3/1000s.	:	7.0	

Plunger stroke mm : 1,5
Tolerance mm + : 0,02(0,06)
Outlet : D

BEGINNING OF DELIVERY

Start of delivery blocking

FULL-LOAD SPEED REGULATION	Shutoff solenoid Volt : 12
Rated speed rpm : 1320 + Del. quantity +	OVERFLOW QUANTITY
cm3/1000 strokes : 47.5	Rated speed rpm : 1250 Overflow quantity
cm3/1000 str. +-: 3.0	csm/10s : 77.7 Tolerance
Volt : 12	ccm/10s + : 27.7
STARTING FUEL DELIVERY	Check tolerance ccm/10s +-: 27.7
Rated speed rpm : 100 + 100 + 100 + 100	Snutoff solenoid Volt : 12
cm3/1000 strokes : 90.0	Rated speed rpm : 500
cm3/1000 str. + : 30.0	Overflow quantity ccm/10s = 52.7
Volt : 12	Tolerance
‡	Check tolerance
	ccm/10s +-: 16.6 Shutoff solenoid
INJECTION—PUMP TEST SPECIFICATIONS	Volt : 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1100	Rated speed rpm : 1320 Del. quantity
SV travel mm : 5.8 + Tolerance mm + : 0.4	cm3/1000 strokes : 47.5 Tolerance
Check tolerance mm +: 0.7	cm3/1000 str. +-: 3.0 Check tolerance
Shutoff solenoid + 12 + 12	cm3/1000S. +-: 8.0 Shutoff solenoid
Rated speed rpm : 500	Volt : 12
SV travel mm : 1.9	Rated speed rpm : 1340 Del. quantity
Tolerance mm +-: 0.4 +	cm3/1000 strokes : 35.0 Check tolerance
tolerance mm + : 0.7 + Shutoff solenoid +	cm3/1000S. +-: 20.0 Shutoff solenoid
Volt : 12	Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 1450 Del. quantity
Rated speed rpm : 1100 + Supply pomp	cm3/1000 strokes : 1.5 Tolerance
pressure bar : 5.2 Tolerance bar + : 0.3	cm3/1000 str. +-: 1.5 Check tolerance
Shutoff solenoid + 12 + 12	cm3/1000s. +-: 1.5 Shutoff solenoid
Rated speed rpm : 500	Volt : 12
Supply pomp + pressure bar : 2.7 +	Rated speed rpm : 1250 Del. quantity
Tolerance bar + : 0.3	cm3/1000 strokes : 62.5

Tolerance cn3/1000 str. +: 1.5 Check tolerance cn3/1000s. +: 3.0 Shutoff solenoid Volt : 12 Reted speed rpm : 750 Del. quantity cn3/1000 strokes : 66.5 Tolerance cn3/1000 strokes : 66.5 Tolerance cn3/1000 strokes : 66.5 Tolerance cn3/1000 str. +: 2.5 Check tolerance cn3/1000 str. +: 2.5 Shutoff solenoid Volt : 12 Rated speed rpm : 500 Del. quantity Tolerance cn3/1000 str. +: 2.5 Shutoff solenoid Volt : 12 Reted speed rpm : 500 Del. quantity Tolerance cn3/1000 str. +: 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 500 Del. quantity Tolerance cn3/1000 str. +: 4.0 Check tolerance cn3/1000 str. +: 4.0 Check tolerance cn3/1000 str. +: 4.0 Shutoff solenoid Volt : 12 Reted speed rpm : 500 Del. quantity Tolerance cn3/1000 str. +: 4.0 Check tolerance cn3/1000 str. +: 2.0 Shutoff solenoid Volt : 12 Reted speed rpm : 1100 Del. quantity cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Check tolerance cn3/1000 str. +: 0.5 Shutoff solenoid Volt : 12  MECHANICAL SHUTOFF  Rated speed rpm : 1250 Del. quantity Cn3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 545 Del. quantity Tolerance mm +: 0.2 Dimension KF mm : 5.2 Tolerance mm +: 0.2 Dimension KF mm : 5.2 Tolerance mm +: 0.7 Tolerance mm +: 0.7	/1000 str. +-: 1.5	
Check tolerance cn3/1000s.	ck tolerance /1000s. +-: 3.0 + FULL-LOAD STOP CONTROL LEVER toff solenoid + Rated speed rpm : 345	
SAJ   START TRANSITION   START TRANSITION   Shutoff solenoid   Shuto	/1000s. +: 3.0 + FULL-LOAD STOP CONTROL LEVER toff solenoid + Rated speed rpm : 345	
March   Marc	/1000s. +: 3.0 + FULL-LOAD STOP CONTROL LEVER toff solenoid + Rated speed rpm : 345	
Shutoff solenoid	toff solenoid + Rated speed rpm : 345	
Reted speed rpm : 750   Reted speed rpm : 345   Del. quantity   Cm3/1000 strokes : 66.5   Cm3/	: 12 + Rated speed rpm : 345	
Reted speed rpm : 750  Del. quantity cm3/1000 strokes : 66.5 Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000 strokes : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 64.5 Tolerance cm3/1000 strokes : 64.5 Tolerance cm3/1000 strokes : 64.5 Tolerance cm3/1000 strokes : 64.5 Tolerance cm3/1000 strokes : 64.5 Tolerance cm3/1000 strokes : 64.5 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Del. quantity Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 75.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 5,2 Tolerance cm3/1000 strokes : 75.0 Tolera		
Reted speed rpm   750		
Del. quiantity cn3/1000 strokes : 66.5		
cm3/1000 strokes       66.5         Tolerance cm3/1000 str.       +: 2.5         cm3/1000 str.       +: 2.5         cm3/1000s.       +: 1.5         cm3/1000s.       +: 3.0         Shutoff solenoid       IDLE DELIVERY         Nated speed rpm : 500       Rated speed rpm : 500         Pel. quantity       cm3/1000 strokes : 2.0         cm3/1000 strokes : 64.5		
Tolerance cm3/1000 str. +: 2.5		
cm3/1000 str. + :       2.5         Check tolerance cm3/1000S. + :       4.0         rm3/100Us. + :       4.0         Shutoff solenoid Volt :       12         Rated speed rpm :       500         Del. quantity cm3/1000 strokes :       2.0         Tolerance cm3/1000 strokes :       64.5         Check tolerance cm3/1000S. + :       4.0         Check tolerance cm3/1000S. + :       6.0         Shutoff solenoid Volt :       12         Rated speed rpm :       1100         Del. quantity cm3/1000 strokes :       64.0         Tolerance cm3/1000 strokes :       64.0         Tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       50.0         Check tolerance cm3/1000 strokes :       1.5         Check tolerance cm3/1		
Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 2.0 Tolerance cm3/1000 str. + : 2.0 Check tolerance cm3/1000s. + : 4.0 Check tolerance cm3/1000s. + : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Del. quantity cm3/1000s. + : 0.5 Check tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 75.0		
Shutoff solenoid   START TRANSITION   START TRANS	<b>/1000</b> str. ←: 2.5 + cm3/1000s. ←: 1.5	
Shutoff solenoid   START TRANSITION   START TRANS	ck tolerance	
Shutoff solenoid   Volt	/1000s. +-: 4.0 + IDLE DELIVERY	
Rated speed rpm : 500   Del. quantity   Check tolerance   Cm3/1000 str. +: 0.5   Check tolerance   Cm3/1000 str. +: 0		
Rated speed rpm : 500  Del. quantity cm3/1000 strokes : 64.5  Tolerance cm3/1000 str. +: 4.0 Check tolerance cm3/1000s. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Del. quantity cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str. +: 0.5 Shutoff solenoid Volt : 12  Rated speed rpm : 450 Del. quantity cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 str. +: 1.5 Tolerance cm3/1000 str. +: 1.5 Tolerance cm3/1000 str. +: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000 str. +: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 5,2 Tolerance mm +: 0,2 Dimension KF mm : 5,2 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1		
Rated speed rpm : 500  Del. quantity cm3/1000 strokes : 64.5 Tolerance cm3/1000 str. +: 2.0 Check tolerance cm3/1000 strokes : 64.5 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Del. quantity cm3/1000 strokes : 64.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 strokes : 64.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 75.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 75.0 Tolerance cm3/1000 strokes : 75		
Del. quantity cm3/1000 str. +: 2.0 Tolerance cm3/1000 str. +: 4.0 Check tolerance cm3/1000S. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Del. quantity cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str. +: 0.5 Shutoff sclenoid Volt : 12  Rated speed rpm : 450 Del. quantity cm3/1000 str. +: 25.0 Shutoff sclenoid Volt : 12  MECHANICAL SHUTOFF  Rated speed rpm : 1250 Del. quantity cm3/1000 str. +: 1.5 Check tolerance cm3/1000 str. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 str. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 str. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 5,2 Tolerance mm +: 0,2 Dimension KF mm : 5,2 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1		
cm3/1000 strokes : 64.5       cm3/1000 str. + : 2.0         Tolerance cm3/1000s. + : 4.0       check tolerance cm3/1000s. + : 2.0         Check tolerance cm3/1000s. + : 6.0       Shutoff solenoid volt : 12         Rated speed rpm : 1100       Del. quantity cm3/1000 str. + : 0.5         Check tolerance cm3/1000 str. + : 0.5       Check tolerance cm3/1000 str. + : 0.5         Check tolerance cm3/1000s. + : 3.0       START TRANSITION cm3/1000 strokes : 50.0         MECHANICAL SHUTOFF       Rated speed rpm : 450         MECHANICAL SHUTOFF       Rated speed rpm : 250         Del. quantity cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 str. + : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm3/1000 strokes : 75.0         Check tolerance cm3/1000 strokes : 1.5       Tolerance cm + : 0.2         Dimension KF mm : 5,2       Tolerance cm + : 0.2		
Tolerance cm3/1000 str. +: 4.0 check tolerance cm3/1000s. +: 2.0 shutoff solenoid volt : 12  Rated speed rpm : 1100 pel. quantity cm3/1000 str. +: 0.5 check tolerance cm3/1000 str. +: 0.5 check tolerance cm3/1000 str. +: 0.5 check tolerance cm3/1000 str. +: 25.0 shutoff solenoid volt : 12  Rated speed rpm : 1250 pel. quantity cm3/1000 str. +: 1.5 check tolerance cm3/1000 str. +: 1.5 check tolerance cm3/1000 str. +: 1.5 shutoff solenoid volt : 12  Rated speed rpm : 1250 pel. quantity cm3/1000 str. +: 25.0 shutoff solenoid volt : 12  Rated speed rpm : 1250 pel. quantity cm3/1000 str. +: 25.0 shutoff solenoid volt : 12  Rated speed rpm : 1250 pel. quantity cm3/1000 str. +: 25.0 shutoff solenoid volt : 12  Rated speed rpm : 270 pel. quantity cm3/1000 str. +: 25.0 shutoff solenoid volt : 12  ELECTR. SHUTOFF control tolerance cm3/1000 str. +: 25.0 shutoff solenoid volt : 12  ELECTR. SHUTOFF control LEVER, IDLE STOP pimension KF mm : 5,2 Tolerance mm +: 0,2 pimension MS mm : 1,2 pel. quantity rolerance mm +: 0,2 pimension MS mm : 1,2 Tolerance mm +: 0,1		
cm3/1000 str. + : 4.0       4.0       cm3/1000s. + : 2.0         check tolerance cm3/1000s. + : 6.0       Shutoff solenoid       volt : 12         Rated speed rpm : 1100         Del. quantity       54.0       Tolerance       Tolerance       Tolerance       450         cm3/1000 str. + : 0.5       Check tolerance       Rated speed rpm : 450       Del. quantity       Del. quantity       cm3/1000 strokes : 50.0         Volt : 12       Tolerance       cm3/1000 str. + : 25.0       Shutoff solenoid       Volt : 12         Rated speed rpm : 1250       Rated speed rpm : 270       Shutoff solenoid       Volt : 12         Rated speed rpm : 270       cm3/1000 strokes : 75.0       Tolerance       cm3/1000 strokes : 75.0         cm3/1000 str. + : 1.5       Tolerance       cm3/1000 str. + : 25.0       Shutoff solenoid         Volt : 12       ASSEMBLY AND ADJUSTMENT DIMENSION         ELECTR. SHUTOFF         CONTROL LEVER, IDLE STOP       Dimension KF mm : 5,2         Rated speed rpm : 345       Dimension MS mm : 1,2         Del. quantity       Tolerance mm + : 0,1		
Check tolerance cm3/1000s, +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Del. quantity cm3/1000 strokes : 64.0 Tolerance cm3/1000s, +: 3.0 Shutoff sclenoid Volt : 12  Rated speed rpm : 450 Del. quantity Cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 50.0 MECHANICAL SHUTOFF Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 75.0 Tolerance cm3/1000 strokes :		
Volt   12   12     Volt   12		
Shutoff solenoid		
Rated speed rpm : 1100  Del. quantity cm3/1000 strokes : 64.0 Tolerance cm3/1000s. + : 0.5 Check tolerance cm3/1000s. + : 3.0  MECHANICAL SHUTOFF Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 75.0 Tolera	<b>/1000</b> \$;	
Rated speed rpm : 1100  Del. quantity cm3/1000 strokes : 64.0  Tolerance cm3/1000 str. +: 0.5  Check tolerance cm3/1000 strokes : 3.0  Del. quantity cm3/1000 strokes : 50.0  MECHANICAL SHUTOFF  Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 str +: 1.5  Shutoff solenoid Volt : 12   Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Shutoff solenoid Volt : 12   ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 5,2  Tolerance mm +: 0,2  Dimension MS mm : 1,2  Del. quantity  Tolerance mm +: 0,1	toff solenoid	
Rated speed rpm : 1100  Del. quantity cm3/1000 strokes : 64.0  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0  Shutoff sclenoid  Volt : 12  MECHANICAL SHUTOFF  Rated speed rpm : 1250  Del. quantity cm3/1000 str. +: 1.5  Tolerance cm3/1000 str. +: 1.5  Tolerance cm3/1000 str. +: 1.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 270  Del. quantity cm3/1000 str. +: 1.5  Tolerance cm3/1000 str. +: 1.5  Shutoff solenoid  Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF  CONTROL LEVER, IDLE STOP  Rated speed rpm : 345  Dimension KF mm : 5,2  Tolerance mm +: 0,2  Dimension MS mm : 1,2  Del. quantity  Tolerance mm +: 0,1	: : 12 +	
Del. quantity cm3/1000 strokes : 64.0  Tolerance cm3/1000s, +: 3.0 Shutoff sclenoid Volt : 12  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 50.0  MECHANICAL SHUTOFF  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000strokes : 75.0  Toler	1	
Del. quantity cm3/1000 strokes : 64.0  Tolerance cm3/1000s, +: 3.0 Shutoff sclenoid Volt : 12  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 50.0  MECHANICAL SHUTOFF  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000 strokes : 75.0  Tolerance cm3/1000s, +: 1.5 Shutoff solenoid Volt : 12   ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 5,2 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Del. quantity Tolerance mm +: 0,1	ed speed rom : 1100	
START TRANSITION   START TRANSITON   START TRANSITON		
START TRANSITION   START TRANSITION   Rated speed rpm   : 450   Del. quantity   cm3/1000 strokes   : 50.0   Tolerance   cm3/1000 strokes   : 50.0   Tolerance   cm3/1000 strokes   : 25.0   Shutoff solenoid   Volt   : 12   Rated speed rpm   : 1250   Del. quantity   cm3/1000 strokes   : 1.5   Tolerance   cm3/1000 strokes   : 1.5   Tolerance   cm3/1000 strokes   : 75.0   Tolerance   cm3/1000 strokes   : 75.0   Tolerance   cm3/1000 strokes   : 75.0   Tolerance   cm3/1000 strokes   : 75.0   Shutoff solenoid   Volt   : 12		
Cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff sclenoid Volt : 12  MECHANICAL SHUTOFF  Rated speed rpm : 1250 Del. quantity cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 5,2 Tolerance mm + : 0,2 Dimension MS mm : 1,2 Del. quantity  Tolerance mm + : 0,2 Dimension MS mm : 1,2 Tolerance mm + : 0,1		
Check tolerance cm3/1000s.		
Del. quantity   Cm3/1000 strokes : 50.0   Tolerance   Cm3/1000 strokes : 50.0   Tolerance   Cm3/1000 strokes : 50.0   Shutoff solenoid   Volt : 12   Tolerance   Cm3/1000 strokes : 1.5   Tolerance   Cm3/1000 strokes : 1.5   Tolerance   Cm3/1000 strokes : 1.5   Tolerance   Cm3/1000 strokes : 75.0   Tolerance   Cm3/1000 strokes : 75.0   Tolerance   Cm3/1000 strokes : 75.0   Shutoff solenoid   Volt   Shutoff solenoid   Shutoff solenoid   Volt   Shutoff solenoid   Volt   Shutoff solen		
Shutoff sclenoid   Cm3/1000 strokes : 50.0		
Volt : 12    Tolerance cm3/1000 str. + : 25.0		
mechanical shutoff  Mechanical shutoff  Mechanical shutoff  Mechanical shutoff  Mechanical speed rpm : 1250  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Shutoff solenoid Volt : 12   Mechanical speed rpm : 270  Del. quantity cm3/1000 strokes : 75.0  Tolerance cm3/1000 str. + : 25.0  Shutoff solenoid Volt : 12   ASSEMBLY AND ADJUSTMENT DIMENSION  Dimension KF mm : 5,2 Tolerance mm + : 0,2 Dimension MS mm : 1,2 Del. quantity  Tolerance mm + : 0,1		
Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000s. +: 1.5  Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 75.0  Tolerance cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  Tolerance mm +: 0,2 Dimension MS mm : 1,2 Del. quantity  Tolerance mm +: 0,1		
Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12   Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 75.0 Tolerance cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  Tolerance mm +: 0,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1		
Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000s. +: 1.5  Shutoff solenoid Volt : 12   ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345  Del. quantity  Rated speed rpm : 270  Del. quantity		
Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 270 Del. quantity cm3/1000 strokes: 75.0 Tolerance cm3/1000 str. +: 25.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSION Dimension KF mm: 5,2 Tolerance mm: +: 0,2 Dimension MS mm: 1,2 Del. quantity  Tolerance mm: +: 0,1	HANICAL SHUTOFF : 12	
Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 270 Del. quantity cm3/1000 strokes: 75.0 Tolerance cm3/1000 str. +: 25.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSION Dimension KF mm: 5,2 Tolerance mm: +: 0,2 Dimension MS mm: 1,2 Del. quantity  Tolerance mm: +: 0,1	+	
Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 270 Del. quantity cm3/1000 strokes: 75.0 Tolerance cm3/1000 str. +: 25.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSION Dimension KF mm: 5,2 Tolerance mm: +: 0,2 Dimension MS mm: 1,2 Del. quantity  Tolerance mm: +: 0,1	ed speed rpm : 1250 +	
cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  cm3/1000 strokes : 75.0 Tolerance cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION Dimension KF mm : 5,2 Tolerance mm + : 0,2 Dimension MS mm : 1,2 Tolerance mm + : 0,1	, quantity \(\frac{1}{270}\)	
Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  Cm3/1000 strokes : 75.0 Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance Tolerance cm3/1000 strokes Tolerance Tolerance cm3/1000 strokes Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance Tolerance	/1000 strokes : 1.5 + Del. quantity	
Check tolerance Check tolerance Cm3/1000 str. +: 25.0  Cm3/1000 str. +: 25.0  Cm3/1000 str. +: 25.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  Tolerance  Tolerance  Cm3/1000 str. +: 25.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  Dimension KF mm : 5,2  Tolerance mm +: 0,2  Dimension MS mm : 1,2  Tolerance mm +: 0,1		
Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  Cm3/1000 str. +: 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION Dimension KF mm : 5,2 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1		
cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 345 Del. quantity  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION Dimension KF mm : 5,2 Tolerance mm +: 0,2 Dimension MS mm : 1,2 Tolerance mm +: 0,1		
Shutoff solenoid  Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF  CONTROL LEVER, IDLE STOP  Rated speed rpm : 345  Del. quantity  Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSION  Dimension KF mm : 5,2  Tolerance mm + : 0,2  Dimension MS mm : 1,2  Tolerance mm + : 0,1		
Volt : 12		
ASSEMBLY AND ADJUSTMENT DIMENSION  ELECTR. SHUTOFF  CONTROL LEVER, IDLE STOP  Rated speed rpm : 345  Del. quantity  ASSEMBLY AND ADJUSTMENT DIMENSION  Dimension KF mm : 5,2  Tolerance mm +: 0,2  Dimension MS mm : 1,2  Tolerance mm +: 0,1		
ELECTR. SHUTOFF  CONTROL LEVER, IDLE STOP  Rated speed rpm: 345  Del. quantity  Dimension KF mm: 5,2  Tolerance mm +: 0,2  Tolerance mm +: 0,1	; 12 †	
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 345  Del. quantity  Dimension KF mm: 5,2  Tolerance mm +: 0,2  Tolerance mm: 1,2  Tolerance mm: +: 0,1		
CONTROL LEVER, IDLE STOP		XNS
Rated speed rpm : 345 + Tolerance mm + : 0,2  Del. quantity + Tolerance mm + : 0,1		
Rated speed rpm : 345 + Dimension MS mm : 1,2  Del. quantity + Tolerance mm +-: 0,1		
Del. quantity + Tolerance mm + : 0,1		
Del. quantity + Tolerance mm + : 0,1		
minden i i A.P		
cm3/1000 strokes : 1.5 + SVS aimension mm : 5.0	quantity + Tolerance mm +-: 0,1	
Tolerance	quantity + Tolerance mm + : 0,1 1000 strokes : 1.5 + SVS dimension mm : 3,6	
cm3/1000 str. +: 1.5	/1000 strokes : 1.5 + SVS dimension mm : 3,6	
	/1000 strokes : 1.5 + SVS dimension mm : 3,6 erance	

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 40,7..46,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.09.96 Test oil : ISO 4113

Part no. : 0 460 426 153 Pump designation : VE6/12F1100R381-1

Customer-spec. information Customer: CDC

Motor : 68T- 5.9 IND.

## TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar + : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

# REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5

Tolerance mm +-:0,02(0,06)

Outlet : D

#### Prestroke

(as of UT) mm : 0.3Tolerance mm +-: 0.02

Check

tolerance mm +-:(0,04)

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm : 3.6 Tolerance mm +-: 0.2

# SUPPLY PUMP PRESSURE

Rated speed rpm : 750

Supply pomp

pressure bar : 3.8 Tolerance bar +: 0.3

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 4.5

#### IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. +-: 3.0

Spread

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s : 7.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1140

Del. quantity

cm3/1000 strokes : 56.0

Tolerance

cm3/1000 str. + : 3.0

STARTING FUEL DELIVERY	Check tolerance	
Rated speed rpm : 100	+ ccm/10s +: 16	5.6
Del. quantity cm3/1000 strokes : 90.0	DELIVERY AND BREAKAWAY CHA	\R/
Tolerance : 30.0	Rated speed rpm : 1140	)
CIIIS/ 1000 SEP. +-: 50.0	+ cm3/1000 strokes : 56	5.0
		3.0
	+ Check tolerance + cm3/1000s. +-:	5.0
INJECTION—PUMP TEST SPECIFICATIONS	+ Rated speed rpm : 1160	
TIMING DEVICE CHARACTERISTIC	+ Del. quantity	5.0
Rated speed rpm : 1100	† Tolerance	
SV travel mm : 5.6	+ cm3/1000 str. +-: 15 + Check tolerance	5.0
Tolerance mm + : 0.4 Check		5.0
tolerance mm +-: 0.7	Rated speed rpm : 1220	)
Rated speed rpm : 500	•	1.
SV travel mm : 1.9	+ Tolerance + 添3/1000 str. +-: *	1.!
Tolerance mm +: 0.4 Check	+ Check tolerance + cm3/1000s. +-:	1.5
tolerance mm +-: 0.7	Rated speed rpm : 1100	
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Del. quantity	
Rated speed rpm : 1100	+ Tolerance	8.5
Supply pomp pressure bar : 5.1	+ cm3/1000 str. + : ' Check tolerance	1.5
Tolerance bar +-: 0.3		3.0
Rated speed rpm : 500	Rated speed rpm : 750	כ
Supply pomp pressure bar : 2.7	+ Del. quantity + cm3/1000 strokes : 7	2.5
Tolerance bar +: 0.3	+ Tolerance	
OVERFLOW QUANTITY	+ Check talerance	2.(
Rated speed rpm : 1100	+ cm3/1/000s. +-:	4.1
Overflow quantity	Rated speed rpm : 500	3
ccm/1 <b>0s</b> : 69.4 Tolerance	+ Del. quantity + cm3/1000 strokes : 54	4.1
ccm/10s +-: 27.7	+ Tolerance	4.1
Check tolerance	+ Check tolerance	
ccm/10s + : 27.7	cm3/1000s. +-:	6.0
Rated speed rpm : 500	Rated speed rom : 900	)
Overflow quantity ccm/10s : 50.0	+ cm3/1000 strokes : 7	2.(
Tolerance ccm/1 <b>0s                                    </b>	+ Tolerance + cm3/1000 str. +- : 1	Ò.:
	+	

16.6

56.0

3.0

6.0

35.0

15.0

15.0

1.5

1.5

1.5

68.5

1.5

3.0

72.5

2.0

4.0

54.0

4.0

6.0

72.0

0.5

CHARACTERISTIC

Check tolerance cm3/1000s. +-	:	3.0	
MECHANICAL SHUTOFF	:		
Rated speed rpm Del. quantity	:	1100	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance	:	1.5	
cm3/1000s. +-	:	1.5	
ELECTR. SHUTOFF CONTROL LEVER, IDL	E S	TOP	
Rated speed rpm	:	375	
Del. quantity cm3/1000 strokes Tolerance	:	1.5	
	:	1.5	
cm3/1000S. +- Shutoff solenoid	•	1.5	
Volt	:	24	
FULL-LOAD STOP CON	NTRO	L LEVER	
Rated speed rpm Del. quantity	:	375	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance	:	1.5	
cm3/1000s. +- Shutoff solenoid	:	1.5	
Volt	:	24	
IDLE DELIVERY			
Rated speed rpm Del. quantity	:	450	
cm3/1000 strokes Tolerarice	:	2.0	
cm3/1000 str. +- Check tolerance	:	2.0	
cm3/1000s. +-	:	2.0	
START TRANSITION			
	:	240	
Del. quantity cm3/1000 strokes	:	35.0	

Tolerance
cm3/1000 str. +-: 15.0

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 90.0
Tolerance
cm3/1000 str. +-: 30.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS
Dimension KF mm : 5,2
Tolerance mm +-: 0,2
MS1 dimension mm : 1,6
Tolerance mm +-: 0,1

SET

Control lever position YA mm : 34,8..38,8

Control lever

position YB mm : 41,0..46,6

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.96 Test oil : ISO 4113

Part no. : 0 460 426 154
Pump designation : VE6/12F1100R331-2

Customer—spec. information Customer : CDC

Motor : 6 BT -5.9 IND.

#### TEST BENCH REQUIREMENTS

# Calibrating-oil return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar + : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5

Tolerance mm +: 0.02(0.06)

Outlet : D

#### Prestroke

(as of UT) mm : 0.3Tolerance mm + : 0.02

Check

tolerance mm +-:(0.04)

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm : 3.6
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 24

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 750

Supply pomp

pressure bar : 3.8 Tolerance bar +: 0.3

Shutoff solenoid

Volt : 24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 62.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 4.5

Shutoff solenoid

Volt : 24

#### IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. + : 1.0

Shutoff solenoid

Volt : 24

Spread

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. : 7.0

+	Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 24
Rated speed rpm : 1150 + Del. quantity +	OVERFLOW QUANTITY
cm3/1000 strokes : 42.0	Rated speed rpm : 1100 Overflow quantity
cm3/1000 str. +-: 3.0 +- Shutoff solenoid +-	ccm/10s : 69.4 Tolerance
Volt : 24	ccm/10s + : 27.7
STARTING FUEL DELIVERY	Check tolerance ccm/10s + : 27.7
Rated speed rpm : 100 +	Shutoff sclenoid Volt : 24
cm3/1000 strokes : 90.0	Rated speed rpm : 500
cm3/1000 str. + : 25.0 + Shutoff solenoid	Overflow quantity ccm/10s : 50.0
Volt : 24	Tolerance
$\frac{1}{1}$	Check tolerance
	ccm/10s +-: 16.6 Shutoff solenoid
INJECTION—PUMP TEST SPECIFICATIONS	Volt : 24
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1100	Rated speed rpm : 1150 Del. quantity
SV travel mm : 6.0 Tolerance mm +-: 0.4	cm3/1000 strokes : 42.0 Tolerance
Check tolerance mm +: 0.7	cm3/1000 str. +-: 3.0 Check tolerance
Shutoff solenoid Volt : 24	cm3/1000s. + : 6.0 Shutoff solenoid
Rated speed rpm : 500	Volt : 24
SV travel mm : 7.9	Rated speed rpm : 1250 Del. quentity
Tolerance mm + : 0.4	cm3/1000 strokes : 1.5
tolerance mm + : 0.7 Shutoff solenoid	cm3/1000 str. +-: 1.5 Check tolerance
Volt ; 24	cm3/1000s.
SUPPLY PUMP PRESSURE CHARACTERISTIC	Volt : 24
Rated speed rpm : 1100 +	Rated speed rpm : 1170 Del. quantity
pressure bar : 5.1 Tolerance bar +-: 0.3	cm3/1000 strokes : 30.0 Tolerance
Shutoff solenoid + Volt : 24	cm3/1000 str. +-: 20.0 Check tolerance
Rated speed rpm : 500	cm3/1000s. +-: 20.0 Shutoff solenoid
Supply pomp pressure bar : 2.7	Volt : 24
Tolerance bar +: 0.3	Rated speed rpm : 1100

Del. quantity		+ Check tolerance
cm3/1000 strokes	: 60.5	+  cm3/1000s. + : 1.5
Tolerance		<del> </del>
cm3/1000 str. +-	: 1.5	FULL-LOAD STOP CONTROL LEVER
Check tolerance	, ,,,,	1
cm3/1000s. +-	: 3.0	Rated speed rpm : 375
Shutoff solenoid	. 5.0	Del. quantity
•	: 24	
Volt	. 24	+ cm3/1000 strokes : 1.5
	000	+ Tolerance
	: 900	+ cm3/1000 str. + : 1.5
Del. quantity		+ Check tolerance
cm3/1000 strokes	: 61.5	+ cm3/1000s. + : 1.5
Tolerance		+
cm3/1000 str. +-	: 2.0	IDLE DELIVERY
Check tolerance		<del>1</del>
cm3/1000s. +-	: 4.0	+ Rated speed rpm : 500
Shutoff solenoid	, ,,,	Del. quantity
Volt	: 24	1 cm3/1000 strokes · 2 0
VOCC		Tolerance
Dested aread area	: 500	
Rated speed rpm	• 500	cm3/1000 str. + : 2.0
Del. quantity		+ Check tolerance
cm3/1000 strokes	: 57.0	+  cm3/1000s. + : 2.0
Tolerance		+ Shutoff solenoid
cm3/1000 str. +-	: 4.0	+ Volt : 24
Shutoff solenoid		+
Volt	: 24	<del>\</del>
		1
Rated speed rpm	<b>:</b> 750	<u> </u>
Del. quantity	,,,,	1
cm3/1000 strokes	: 62.5	<u></u>
Tolerance	. 05.3	F START TRANSITION
	: 0.5	T START TRANSLITON
cm3/1000 str. +-	: 0.5	700
Check tolerance		+ Rated speed rpm : 300
cm3/1000s. +-	: 3.0	+ Del. quentity
Shutoff solenoid		+ cm3/1000 strokes : 60.0
Volt	: 24	† Tolerance
		+ cm3/1000 str. ++: 10.0
MECHANICAL SHUTOFF		→ Volt         :         24
		+
Rated speed rpm	: 1100	<del>}</del>
Del. quantity		+ Rated speed rpm : 130
cm3/1000 strokes	: 1.5	Del. quantity
Tolerance	. ,.,	cm3/1000 strokes : 95.0
cm3/1000 str. +-	: 1.5	+ Tolerance
	. 1.5	- cm3/1000 str. +-: 25.0
Check tolerance	. 4 =	
cm3/1000s. +-	: 1.5	+ Shutoff solenoid
Shutoff solenoid		† Volt : 24
Volt	: 24	+
		+
ELECTR. SHUTOFF		+
CONTROL LEVER, IDL	E STOP	→ Dimension KF mm : 5,2
= ==:=: <b>;</b>		+ Tolerance mm + : 0,2
Rated speed rpm	: 375	Dimension MS mm : 1,4
Del. quantity	. • • • •	+ Tolerance mm +: 0,1
cm3/1000 strokes	: 1.5	SVS dimension mm : 3,6
	. 1.5	
Tolerance	. 15	7
cm3/1000 str. +-	: 1.5	†
		+

CONTROL LEVER POSITION SET

Control lever position YA mm : 34,8..38,8

Control lever

position YB mm : 41,5..47,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.09.96 Edition : ISO 4113 Test oil

: 0 460 426 155 Pump designation : VE5/12F1050R381-3

Customer-spec. information Customer : CDC

: 6BT- 5.9 IND. Motor

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C 45 Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 tiar Tolerance bar +-:

Test Lines : 1 680 750 000

Outside diameter : 6.00

2.00 x inside diameter :

x length mm :

## REMARKS

## BEGIAMING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5

Tolerance mm + : 0.02(0.06): D

Outlet

#### Prestroke

(as of UT) mm : 0,3 Tolerance mm +-: 0,02

Check

+-: (0,04) tolerance mm

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm 3.6 Tolerance mm 0.2

Shutoff solenoid

12 Volt

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 750 Supply pomp

pressure bar 4.0 Tolerance bar +-: 0.3

Shutoff solencid

12 Volt

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

750 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 73.5

Tolerance

cm3/1000 str. +-: 0.5 Spread

cm3/1000 strokes : 4.5

Shutoff solenoid

12 Volt

## IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. +-:

Shutoff solenoid Volt

12 Spread

7.0 cm3/1000 strokes :

Check tolerance

cm3/1000s. 7.0

FULL-LOAD SPEED REGULATION	Shutoff solenoid Volt : 12
Rated speed rpm : 1100 Del. quantity	OVERFLOW QUANTITY
cm3/1000 strokes : 55.0	Rated speed rpm : 1050 Overflow quantity
cm3/1000 str. +: 3.0 + Shutoff solenoid	ccm/10s : 69.4 Tolerance
Volt : 12	ccm/10s + : 27.7
STARTING FUEL DELIVERY	Check tolerance ccm/10s +-: 27.7
Rated speed rpm : 100 + Del. quantity +	Shutoff solenoid Volt : 12
cm3/1000 strokes : 90.0 +	Rated speed rpm : 500
cm3/1000 str. ÷ : 30.0 + Shutoff solenoid	Overflow quantity ccm/10s : 50.0
Volt : 12	Tolerance ccm/10s +- : 16.6
<u></u>	Check tolerance ccm/10s +-: 16.6 Shutoff solenoid
INJECTION—PUMP TEST SPECIFICATIONS	Volt : 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1050	Rated speed rpm : 1100 Del. quantity
SV travel mm : 5.4 Tolerance mm +-: 0.4	cm3/1000 strokes : 55.0 Tolerance
Check tolerance mm + : 0.7	cm3/1000 str. +-: 3.0 Check tolerance
Shutoff solenoid + Volt : 12 +	cm3/1000s. +-: 6.0 Shutoff solenoid
Rated speed rpm : 500	Volt : 12
SV travel mm : 1.7	Rated speed rpm : 1130 Del. quantity
Tolerance mm +: 0.4 +	cm3/1000 strokes : 30.0 Check tolerance
tolerance mm + : 0.7 + Shutoff solenoid +	cm3/1000s. +-: 15.0 Shutoff solenoid
Volt : 12	Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC +	Rated speed rpm : 1200 Del. quantity
Rated speed rpm : 1050 + Supply pomp +	cm3/1000 strokes : 1.5 Tolerance
pressure bar : 5.2 + Tolerance bar + : 0.3	cm3/1000 str. + : 1.5 Check tolerance
Shutoff solenoid + 12 +	cm3/1000s. +-: 1.5 Shutoff solenoid
Rated speed rpm : 500	Volt : 12
Supply pomp + pressure bar : 2.9	Rated speed rpm : 1050 Del. quantity
Tolerance bar +: 0.3 +	cm3/1000 strokes : 70.0

Tolerance	1 5	† Check tolerance
cm3/1000 str. +-: Check tolerance	1.5	+ cm3/1000s. +-: 1.5
cm3/1000s. +-:	3.0	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	3.0	TOLE COAD STOL CONTINUE EEVEN
Volt :	12	Rated speed rpm : 375
		- Del. quantity
Rated speed rpm :	900	+ cm3/1000 strokes : 1.5
Del. quantity		† Tolerance
cm3/1000 strokes :	73.0	+ cm3/1000 str. + : 1.5
Tolerance cm3/1000 str. +-:	2.0	+ Check tolerance + cm3/100Qs. +-: 1.5
Check tolerance	2.0	T (113) (100¢s. + 1.3
cm3/1000s. +:	4.0	IDLE DELIVERY
Shutoff solenoid		+
Volt :	12	+ Rated speed rpm : 450
		+ Del. quantity
Rated speed rpm :	500	+ cm3/1000 strokes : 2.0
Del. quantity	E7 0	+ Tolerance
cm3/1000 strokes : Tolerance	57.0	+ cm3/1000 str. + : 2.0 + Check tolerance
cm3/1000 str. +-:	4.0	+ cm3/1000s. +-: 2.0
Check tolerance	•••	+ Shutoff solenoid
cm3/1000s. +-:	6.0	+ Volt : 12
Shutoff solenoid		+
Volt :	12	‡
Rated speed rpm :	750	+
Del. quantity	777 F	†
cm3/1000 strokes :	73.5	CTART TRANSCITION
Tolerance cm3/1000 str. +:	0.5	† START TRANSITION
Check tolerance	0.5	Rated speed rpm : 240
cm3/1000s. ←:	3.0	+ Del. quantity
Shutoff solenoid		+ cm3/1000 strokes : 45.0
Volt :	12	† Tolerance
		+ cm3/1000 str. +: 15.0
MECHANICAL SHUTOFF		+ Shutoff solenoid + Volt : 12
Datad anod mm .	1050	†
Rated speed rpm : Del. quantity	טכטו	Rated speed rpm : 130
cm3/1000 strokes :	1.5	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 100.0
cm3/1000 str. +-:	1.5	† Tolerance
Check tolerance	4 =	+ cm3/1000 str. +-: 30.0
cm3/1000s. +-:	1.5	+ Shutoff solenoid
Shutoff solenoid Volt :	12	+ Volt : 12
·	12	
		ASSEMBLY AND ADJUSTMENT DIMENSIONS
ELECTR. SHUTOFF		+
CONTROL LEVER, IDLE S'	TOP	+ Dimension KF mm : 5,2
Datad assad ass	375	+ Tolerance mm + : 0,2
Rated speed rpm : Del. quantity	ر اد	+ MS1 dimension mm : 1,6 + Tolerance mm ++: 0,1
cm3/1000 strokes :	1.5	+ SVS dimension mm : 3,6
Tolerance	1 • •	1
cm3/1000 str. +-:	1.5	+

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control Lever position YB mm : 40,7..46,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.09.96 Edition : ISO 4113 Test oil

Part no. : 0 460 426 156 Pump designation: VE6/12F1100R381-4

Customer-spec. information Customer : CDC

Motor : 6BT- 5.9 IND.

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C Tolerance \*C + :

Overflow

restriction mm : 0.55

Inlet press. bar : Tolerance bar + :

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar 250 Tolerance bar +-:

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm 840

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5

Tolerance mm +: 0,02(0,06)

: D Outlet

#### Prestroke

: 0,3 (as of UT) mm Tolerance mm +-: 0,02

Check

tolerance mm +-:(0,04)

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 900

Setting mm 4.4 Tolerance mm 0.2 Shutoff solenoid 24 Volt

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 900 Supply pomp pressure bar 5.0 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

24

Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 67.5 Tolerance cm3/1000 str. +-:0.5 Spread cm3/1000 strokes : 4.5 Shutoff solenoid

Volt

## IDLE SETTING

Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 str. + :Shutoff solenoid Volt 24 Spread cm3/1000 strokes : 7.0 Check tolerance

cm3/1000s. 7.0

+	Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 24
Rated speed rpm : 1150  Del. quantity	Rated speed rpm : 500 Supply pomp
cm3/1000 strokes : 47.5	pressure bar : 3.2
Tolerance	Tolerance bar + : 0.3
cm3/1000 str. + : 3.0	Shutoff solenoid
Shutoff solenoid +	Volt : 24
Volt : 24 +	
†	OVERFLOW QUANTITY
STARTING FUEL DELIVERY	1400
Data diamental and 100	Rated speed rpm : 1100
Rated speed rpm : 100	Overflow quantity
Del. quantity + cm3/1000 strokes : 110.0 +	ccm/10s : 69.4 Tolerance
Tolerance	ccm/10s +: 27.7
cm3/1600 str. +: 40.0	COM/ 105
Shutoff solenoid +	Check tolerance
Volt : 24	ccm/10s + : 27.7
+	Shutoff solenoid
<del>}</del>	Volt : 24
+	
+	Rated speed rpm : 500
	Overflow quantity
INJECTION-PUMP TEST SPECIFICATIONS +	ccm/10s : 55.5
TIMING DELITOR CHARACTERICITIC	Tolerance
TIMING DEVICE CHARACTERISTIC	ccm/10s +-: 16.6
Rated speed rpm : 1100	Check tolerance
Traced Speed (All : 1700	ccm/10s +-: 16.6
SV travel mm : 5.9	Shutoff solenoid
Tolerance mm +: 0.4	Volt : 24
Check	
tolerance mm +: 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid +	
Volt ; 24 +	Rated speed rpm : 1150
750	Del. quantity
Rated speed rpm : 750	cm3/1000 strokes : 47.5
SV travel mm : 3.3	Tolerance cm3/1000 str. +-: 3.0
SV travel mm : 3.3 + Tolerance mm +-: 0.4	Check tolerance
Check	cm3/1000s. +-: 8.0
tolerance mm +: 0.7	Shutoff solenoid
Shutoff solenoid +	Volt : 24
Volt : 24 +	
+	Rated speed rpm : 1170
SUPPLY PUMP PRESSURE CHARACTERISTIC +	Del. quantity
1400	cm3/1000 strokes : 30.0
Rated speed rpm : 1100	Check tolerance
Supply pomp + pressure bar : 5.8 +	cm3/1000s. +-: 20.0 Shutoff solenoid
pressure bar : 5.8 + Tolerance bar + : 0.3 +	Volt : 24
Shutoff solenoid	1020
Volt : 24	Rated speed rpm : 1240
1	Del. quantity
Rated speed rpm : 750	cm3/1000 strokes : 1.5
Supply pomp +	Tolerance
pressure bar : 4.3	cm3/1000 str. + : 1.5
Tolerance bar + : 0.3 +	

Check tolerance cm3/1000S. +-:	1.5	
Shutoff solenoid Volt :	24	- ELECTR. SHUTOFF - CONTROL LEVER, IDLE STOP
	1100	
Rated speed rpm : Del. quantity	ڔ	- Del. quantity
cm3/1000 strokes : Tolerance	66.0	- cm3/1000 strokes : 1.5 - Tolerance
cm3/1000 str. +-: Check tolerance	1.5	- cm3/1000 str. +-: 1.5 - Check tolerance
cm3/1000s. +-:	3.0	cm3/1000s. +-: 1.5
Shutoff solenoid Volt :	24	FULL-LOAD STOP CONTROL LEVER
Rated speed rpm : Del. quantity	750	Rated speed rpm : 400 - Del. quantity
cm3/1000 strokes :	83.5	- cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. +-:	2.0	- Tolerance - cm3/1000 str. +-: 1.5
Check tolerance cm3/1000s. +-:	4.0	- Check tolerance - cm3/1000s. +-: 1.5
Shutoff solenoid Volt :	24 -	IDLE DELIVER
Rated speed rpm :	500	- Rated speed rpm : 500
Del. quantity cm3/1000 strokes :	87.0	Del. quantity cm3/1000 strokes : 2.0
Tolerance cm3/1000 str. +:	4.0	Tolerance
Check tolerance cm3/1000s. +:	6.0	- Check tolerance - cm3/1000s. +-: 2.0
Shutoff solenoid Volt :	24	- Shutoff solenoid - Volt : 24
Rated speed rpm :	1000	
Del. quantity cm3/1000 strokes :	67.5	-
Tolerance cm3/1000 str. +:	0.5	OTANT TRANSPITTON
Check tolerance cm3/1000S. +-:	3.0	- START TRANSITION
Shutoff solenoid Volt :	24	Rated speed rpm : 250 Del. quantity
		cm3/1000 strokes : 85.0 Tolerance
MECHANICAL SHUTOFF	+	cm3/1000 str. +-: 15.0 Shutoff solenoid
Rated speed rpm : Del. quantity	1100	- Volt : 24
cm3/1000 strokes : Tolerance	1.5	Rated speed rpm : 130
cm3/1000 str. +-: Check tolerance	1.5	Del. quantity cm3/1000 strokes : 120.0
cm3/1000s. +-: Shutoff solenoid	1.5	- Tolerance - cm3/1000 str. +-: 40.0
Volt :	24	- Shutoff solenoid
	3	- Volt : 24

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
Tolerance mm + : 0,02
MS1 dimension mm : 1,8
Tolerance mm + : 0,1
SVS dimension mm : 4,4

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 41,6..47,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06,09,96 Test oil : ISO 4313

: 0 460 426 157 Part no. Pump designation: VE6/12F1050R381+5

Customer-spec. information : CDC Customer

: 6 BT -5.9 IND. Motor

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

bar 250 Tolerance bar +- :

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 840 x length mm :

REMARKS

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5

Tolerance mm +: 0.02(0.06)

Outlet

#### Prestroke

(as of UT) mm : 0,3 Tolerance mm + : 0,02

Check

+ : (0.04)tolerance mm

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

3.6 Setting mm Tolerance mm 0.2 Shutoff solenoid

24 Volt

## SUPPLY PUMP PRESSURE

750 Rated speed rom Supply pomp

pressure bar 3.8 Tolerance bar +-: 0.3

Shutoff solenoid

24 Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

750 Rated speed rpm : Del. guantity

cm3/1000 strokes : 63.0

Tolerance

cm3/1000 str. +-: 0.5 Spread

cm3/1000 strokes :

Shutoff solenoid 24 Volt

#### IDLE SETTING

Rated speed rpm 375

Del. quantity cm3/1000 strokes :

Tolerance cm3/1000 str. + :1.0

11.0

Shutoff solenoid

Volt 24

Spread

cm3/1000 strokes : 7.0

Check tolerance

7.0 cm3/1000s.

FULL-LOAD SPEED REGULATION	Shutoff solenoid Volt : 24
Rated speed rpm : 1100	OVERFLOW QUANTITY
cm3/1000 strokes : 49.0	Rated speed rpm : 1050 Overflow quantity
cm3/1000 str. + : 3.0 + Shutoff solenoid	ccm/10s : 69.4 Tolerance
Volt : 24	ccm/10s + : 27.7
STARTING FUEL DELIVERY	Check tolèrance ccm/10s +-: 27.7
Rated speed rpm : 100 + Del. quantity +	Shutoff solenoid Volt : 24
cm3/1000 strokes : 90.0	Rated speed rpm : 500
cm3/1000 str. +: 25.0 + Shutoff solenoid +	Overflow quantity : 50.0
Volt : 24	Tolerance + : 16.6
	Check telerance ccm/10s +-: 16.6 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	Volt : 24
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1050	Rated speed rpm : 1100 Del. quantity
SV trevel mm : 5.4 Tolerance mm +: 0.4	cm3/1000 strokes : 49.0 Tolerance
Check tolerance mm +: 0.7	cm3/1000 str. + : 3.0 Check tolerance
Shutoff solenoid Volt : 24	cm3/1000s. +-: 6.0 Shutoff solenoid
Rated speed rpm : 500	Volt : 24
SV travel mm : 1.6	Rated speed rpm : 1250 Del. quantity
Tolerance mm + : 0.4  Check	cm3/1000 strokes : 1.5 Tolerance
tolerance mm +: 0.7 + Shutoff solenoid +	cm3/1000 str. +-: 1.5 Check tolerance
Volt : 24	cm3/1 <b>000</b> S. + : 1.5 Shutoff solenoid
SUPPLY PUMP PRESSURE CHARACTERISTIC +	Volt : 24
Rated speed rpm : 1050 + Supply pomp	Rated speed rpm : 1130 Del. quantity
pressure bar : 5.1 Tolerance bar +: 0.3	cm3/1000 strokes : 25.0 Tolerance
Shutoff solenoid + Volt : 24 +	cm3/1000 str. + : 20.0 Check tolerance
Rated speed rpm : 500	cm3/1000s. +-: 20.0 Shutoff solenoid
Supply pomp + pressure bar : 2.7 +	Volt : 24
Tolerance bar +-: 0.3	Rated speed rpm : 1050

Del. quantity cm3/1000 strokes : 61.0	+ Check tolerance + cm3/1000s. +-: 1.5
Tolerance cm3/1000 str. +-: 1.5	FULL-LOAD STOP CONTROL LEVER
Check tolerance cm3/1000s. +-: 3.0	Rated speed rpm : 375
Shutoff solenoid Volt : 24	+ Del. quantity + cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm : 900 Del. quantity	cm3/1000 str. + : 1.5 Check tolerance
cm3/1000 strokes : 62.5 Tolerance	cm3/1000s. +-: 1.5
cm3/1000 str. +-: 1.5 Check tolerance	IDLE DELIVERY
cm3/1000S. + : 3.5 Shutoff sclenoid	Rated speed rpm : 500  Del. quantity
Volt : 24	+ cm3/1000 strokes : 2.0 + Tolerance
Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 60.0	+ cm3/1000 str. +-: 2.0 + Check tolerance + cm3/1000s. +-: 2.0
Tolerance cm3/1000 str. +-: 4.0	Shutoff solenoid Volt : 24
Shutoff solenoid Volt : 24	‡
Rated speed rpm : 750	+
Del. quantity cm3/1000 strokes : 63.0	STADT TOANGETTON
Tolerance cm3/1000 str. +-: 0.5 Check tolerance	+ START TRANSITION + Rated speed rpm : 350
cm3/1000S. +-: 3.0 Shutoff solenoid	Del. quantity  cm3/1000 strokes : 55.0
Volt : 24	Tolerance + cm3/1000 str. ++: 10.0
MECHANICAL SHUTOFF	Shutoff solenoid Volt : 24
Rated speed rpm : 1050	170
Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 95.0
cm3/1000 str. + : 1.5 Check tolerance	Tolerance cm3/1000 str. + : 25.0
cm3/1000s. +-: 1.5 Shutoff solenoid	Shutoff solenoid Volt : 24
Volt : 24	<u> </u>
ELECTR. SHUTOFF	ASSEMBLY AND ADJUSTMENT DIMENSIONS
CONTROL LEVER, IDLE STOP	Dimension KF mm : 5,2 Tolerance mm + : 0,2
Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5	Dimension MS mm : 1,4  Tolerance mm + : 0,1  SVS dimension mm : 3,6
Cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5	+ SVS dimension mm : 3,6
CHID/ 1000 SCI . 1	1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 39,9..45,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.06.95 Test oil : ISO 4113

Part no. : 0 460 485 025 Pump designation : VE5/8F2100L633

Customer-spec. information

Customer : VW

Motor : 2,41 SD f. T4
Power KW : 57.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.3
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500 Supply pomp

pressure bar : 7.4
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 36.0 Tolerance

cm3/1000 str. +-: 0.5 Spread

cm3/1000 strokes : 2.0 Shutoff solenoid Volt : 12

IDLE SETTING

Rated speed rpm : 415
Del. quantity

cm3/1000 strokes : 8.0 Tolerance

cm3/1000 str. + : 1.0 Shutoff solenoid

Volt : 12

Spread cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s : 3.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 str. + : 2.0 Shutoff solenoid

12

Volt :

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity	+	Check	
cm3/1000 strokes : 60.0	) +	tolerance mm +-	: 0.7
Tolerance	+	Shutoff solenoid	
cm3/1000 str. + : 25.0	) +	Volt	: 12
Shutoff solenoid	+		
Volt : 12	<b>:</b> +	SUPPLY PUMP PRESSU	RE CHARACTERISTIC
	+		
	+		: 1790
	+	Supply pomp	
LOAD-DEPENDENT START OF DELI	:VERY +	pressure bar	: 8.1
SETTING	+	Tolerance bar +-	: 0.3
	+	Shutoff solenoid	
DELIVERY DIFFERENCE	+	Volt	: 12
	+		
Rated speed rpm : 1500	+	Rated speed rpm	: 1100
Del. quantity	. +	Supply pomp	
cm3/1000 strokes : -7.0	) +	pressure bar	: 6.2
Tolerance	+	Tolerance bar +-	: 0.3
cm3/1000 str. +-: 1.0	) +	Shutoff solenoid	
Shutoff solenoid	+	Volt	: 12
Volt : 12	<b>;</b>		
	+	OVERFLOW QUANTITY	
PRESSURE DIFFERENCE	†		
	+	Rated speed rpm	: 2100
Rated speed rpm : 1500	†	Overflow quantity	
Del. quantity	. +	ccm/10s	: 97.2
cm3/1000 strokes : -0.2	<b>?</b>	Tolerance	
Tolerance	. t	ccm/10s +-	: 41.6
cm3/1000 str. + : 0.1	†		
Shutoff solenoid	, †	Check tolerance	55.5
Volt : 12	<b>'</b>	ccm/10s +-	: 55.5
	<b>†</b>	Shutoff solenoid	40
TIMING-DEVICE TRAVEL DIFFERE	T T	Volt	: 12
Bata d annual man	†	Bakad award awa	. (00
Rated speed rpm : 1500	†	Rated speed rpm	: 600
Del. quantity cm3/1000 strokes : -1.2	, †	Overflow quantity ccm/10s	: 63.8
	Ť	Tolerance	. 65.6
Tolerance cm3/1000 str. + : 0.1	T		: 22.2
cm3/1000 str. +-: 0.1 Shutoff solenoid	T.	ccm/10s +-	. 22.2
Volt : 12	, T	Check tolerance	
voct . 12	· I	ccm/10s +-	: 34.7
	I	Shutoff solenoid	. 54.7
INJECTION-PUMP TEST SPECIFIC	ATTONS I	Volt	: 12
THOUGHTON FORM TEOL OFFORTIAL	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		- 12
TIMING DEVICE CHARACTERISTIC	:	DELIVERY AND BREAK	AWAY CHARACTERISTIC
	<u> </u>		
Rated speed rpm : 1790	+	Rated speed rpm	: 2400
	+	Del. quantity	
SV travel mm : 6.3	; <del> </del>	cm3/1000 strokes	: 12.0
Tolerance mm +-: 0.4		Tolerance	
Check	+	cm3/1000 str. +	: 2.0
tolerance mm +-: 0.7	<b>'</b>	Check tolerance	
Shutoff solenoid	+	cm3/1000s. +-	: 4.0
Volt : 12	+	Shutoff solenoid	
	+	Volt	: 12
Rated speed rpm : 1100	+		
	+	Rated speed rpm	: 2300
SV travel mm : 1.6		Del. quantity	
Tolerance mm +-: 0.4	+	cm3/1000 strokes	: 22.0

Tolerance		l Canad
cm3/1000 str. +-:	5.0	+ Spread + cm3/1000 strokes : 5.0
	3.0	+ cm3/1000 strokes : 5.0
Check tolerance		
cm3/1000s. +-:	6.0	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid		†
Volt :	12	+ Rated speed rpm : 415
		+ Del. quantity
Rated speed rpm :	2600	+ cm3/1000 strokes : 1.5
Del. quantity		† Tolerance
cm3/1000 strokes :	3.0	+ cm3/1000 str. +-: 1.5
Tolerance		+ Spread
cm3/1000 str. +-:	3.0	+ cm3/1000 strokes : 5.0
Check tolerance		+ Check tolerance
cm3/1000s. +-:	3.0	+ cm3/1000s. $+$ : 1.5
Shutoff solenoid		+ Spread
Volt :	12	+ cm3/1000 strokes : 5.0
	•	+
Rated speed rpm :	2100	+
Del. quantity		+
cm3/1000 strokes :	30.0	+
Tolerance		+
cm3/1000 str. +-:	1.0	+
Check tolerance		+ CHECKING LOAD-DEPENDENT
cm3/1000s. +-:	2.2	+ START OF DELIVERY
Shutoff solenoid		+
Volt :	12	DELIVERY DIFFERENCE
		+
Rated speed rpm :	600	+ Rated speed rpm : 1500
Del. quantity		+ Del. quantity
cm3/1000 strokes :	33.8	+ cm3/1000 strokes : −10.5
Tolerance		+ Tolerance
cm3/1000 str. +:	1.5	+ cm3/1000 str. $+$ : 3.0
Check tolerance		+ Check tolerance
cm3/1000s. +-:	3.0	+ cm3/1000s. $+-$ : 4.0
Shutoff solenoid		+ Shutoff solenoid
Volt :	12	+ Volt : 12
		+
Rated speed rpm :	1250	TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity		+
cm3/1000 strokes :	36.0	+ Rated speed rpm : 1500
Tolerance		+ Del. quantity
cm3/1000 str. +-:	0.5	+ cm3/1000 strokes : -1.2
Check tolerance		+ Tolerance
cm3/1000s. +-:	2.2	+ cm3/1000 str. +-: 0.1
Shutoff solenoid		+ Check tolerance
Volt :	12	+ cm3/1000s. +-: 0.1
	_	+ Shutoff solenoid
		+ Volt : 12
<del></del>		+
ELECTR. SHUTOFF		+ DELIVERY DIFFERENCE
CONTROL LEVER, IDLE	STOP	+
		+ Rated speed rpm : 1500
Rated speed rpm :	415	+ Del. quantity
Del. quantity		+ cm3/1000 strokes : 1.5
cm3/1000 strokes :	1.5	+ Tolerance
Tolerance		+ cm3/1000 str. +-: 1.5
cm3/1000 str. +-:	1.5	+ Check tolerance
Check tolerance		+ cm3/1000s. $+-$ : 1.5
cm3/1000s. +-:	1.5	+ Shutoff solenoid
· · · · · · · · · · · · · · · · · ·		+ Volt : 12
		•

#### PRESSURE DIFFERENCE

Rated speed rpm : 1500

Supply pomp

pressure bar -1.0 Tolerance bar + : 0.2

Shutoff solenoid

Volt 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : Tolerance mm + : 0.2

Check

tolerance mm + : 0.6

Shutoff solenoid

Volt 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strckes : 6D.0

Tolerance

cm3/1000 str. + :25.0

Shutoff solenoid

Volt 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm + : 0,1 Dimension KF mm : 5,8 Tolerance mm +: 0,1Dimension MS mm : 1,4

Tolerance mm + : 0,1

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,2..39,2

Control lever

: 38,5..49,5 position YB mm

Refer to Service	Info for test and
adjustment instru See microcard(s)	ctions.
Edition Test oil	: 04.11.96 : ISO 4113
Part no. Pump designation	: 0 460 485 036 : VE5/8F2100L750
Customer-spec. in	formation : VW
Motor	: 2,4L SD
Fower KW	: 55.0
TEST BENCH REQUIR	EMENTS
Calibrating—oil return	
temperature °C	: 45 : 1
Tolerance °C +-	: 1
Overflow	: 0.55
restriction mm	. 0.55
Inlet press. bar	: 0.35
Tolerance bar +-	: 0.05
Test nozzle holde	
assembly	: 1 688 901 000
Opening pressure	. 4/7
bar Tolerance bar +-	: 147
	-
Test lines	: 1 680 750 000
Outside diameter	: 6.00
x inside diameter	
x length mm	: 840
REMARKS	

ITHTING DEATCE INV	VEL		
Rated speed rpm	:	1500	
Setting mm Tolerance mm +- Shutoff solenoid	:	4.3 0.2	
Volt	:	12	
SUPPLY PUMP PRESS	URE		
Rated speed rpm Supply pomp	:	1500	
pressure bar	:	7.4	
Tolerance bar +- Shutoff solenoid	•	0.3	
Volt	:	12	
FULL-LOAD DELIV.	WITH	OUT BOOST PRESSU	RE
Rated speed rpm	:	1250	
Del. quantity cm3/1000 strokes Tolerance	:	36.0	
cm3/1000 str. +-	:	<b>0.</b> 5	
Spread cm3/1000 strokes	:	2.0	
Shutoff solenoid		42	
Volt	:	12	
HOUSING-FIXED IDL			
Rated speed rpm Del. quantity	:	540	
cm3/1000 strokes	:	7.0	
Tolerance cm3/1000 str. +-		0.5	
Shutoff solenoid Volt	:	12	
IDLE DELIVERY	•	, ~	
Rated speed rpm	:	415	
Del. quantity			
cm3/1000 strokes Tolerance	:	8.0	
cm3/1000 str. +- Spread	:	1.0	
cm3/1000 strokes Shutoff solenoid	:	2.0	
Volt	:	12	
UTCU TNIE SETTING			
HIGH IDLE SETTING			
Rated speed rpm Del. quantity	:	465	

TIMING DEVICE TRAVEL

Tolerance +	
cm3/1000 str. +: 1.0 + Shutoff solenoid +	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION +	Rated speed rpm : 1790
Rated speed rpm : 2400 + Del. quantity +	SV travel mm : 6.3
cm3/1000 strokes : 12.0 + Tolerance +	Tolerance mm +-: 0.4 Check
cm3/1000 str. +-: 2.0 +- Shutoff solenoid +-	tolerance mm + : 0.7 Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1100
Rated speed rpm : 100 + Del. quantity +	SV travel mm : 1.6 Tolerance mm +-: 0.4
cm3/1000 strokes : 55.0	Check tolerance mm +-: 0.7
cm3/1000 str. +-: 20.0 +- Shutoff solenoid +-	Shutoff solenoid Volt : 12
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
‡	Rated speed rpm : 1790
LOAD-DEPENDENT START OF DELIVERY SETTING	Supply pomp : 8.1
DELIVERY DIFFERENCE	Tolerance bar + : 0.3 Shutoff solenoid
Rated speed rpm : 1500	Volt : 12
Del. quantity + cm3/1000 strokes : -7.0 +	Rated speed rpm : 1100 Supply pomp
Tolerance + : 1.0 +	pressure bar : 6.2 Tolerance bar + : 0.3
Shutoff solenoid + 12 + 12	Shutoff solenoid Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1500	Rated speed rpm : 2100
Del. quantity cm3/1000 strokes : -0.2	Overflow quantity ccm/10s : 97.2
Tolerance cm3/1000 str. + : 0.1	Tolerance ccm/10s +-: 41.6
Shutoff solenoid Volt : 12	Check tolerance
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid
Rated speed rpm : 1500	
Del. quantity cm3/1000 strokes : -1.2	Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
Tolerance cm3/1000 str. + : 0.1	Tolerance
Shutoff solenoid Volt : 12	ccm/10s + : 22.2
T	

		- Tolerance
Check tolerance		- cm3/1000 str. +-: 1.5
ccm/10s +- :	: 34.7	Check tolerance
Shutoff solenoid		- cm3/1000s. + : 3.0
Volt	: 12	- Shutoff solenoid
		- Volt : 12
DELTHERY AND DREAM	AWAY CHARACTERISTIC	. 12
DELIAEKI MIAD BEENEN	AWAI CHARACIERISIIC	Poted 1350
Data dama ada aun	. 2/00	Rated speed rpm : 1250
	: 2400 -	Pel. quantity
Del. quantity	40.0	- cm3/1000 strokes : 36.0
cm3/1000 strokes	: 12.0	- Tolerance
Tolerance	-	- cm3/1000 str. +-: 0.5
cm3/1000 str. +-	: 2.0	- Check tolerance
Check tolerance	-	- cm3/1000s. +-: 2.2
cm3/1000s. +-	: 4.0	- Shutoff solenoid
Shutoff solenoid	-	- Volt : 12
Volt	: 12	
Rated speed rpm	: 2300 -	MECHANICAL SHUTOFF
Del. quantity	. 2000	L
cm3/1000 strokes	: 22.0	Rated speed rpm : 2100
Tolerance	. 22.0	
	. 50	Pel. quantity
cm3/1000 str. +-	: 5.0 -	- cm3/1000 strokes : 1.5
Check tolerance	1	Tolerance
cm3/1000s. +-	: 6.0	- cm3/1000 str. + : 1.5
Shutoff solenoid	1	- Check tolerance
Volt	: 12 -	- cm3/1000s. +-: 1.5
	4	- Shutoff solenoid
Rated speed rpm	: 2600	- Volt : 12
Del. quantity	4	<u> </u>
cm3/1000 strokes	: 3.0	
Tolerance	4	- ELECTR. SHUTOFF
cm3/1000 str. +-	: 3.0	CONTROL LEVER, IDLE STOP
Check tolerance		
cm3/1000s. +-	: 3.0	Rated speed rpm : 415
	4	h Del geantity
Shutoff solenoid	. 12	- Del quantity - cm3/1000 strokes : 1 5
Shutoff solenoid	: 12	- cm3/1000 strokes : 1.5
Shutoff solenoid Volt	-	- cm3/1000 strokes : 1.5 - Tolerance
Shutoff solenoid Volt Rated speed rpm	: 12 - : 2100 -	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5
Shutoff solenoid Volt Rated speed rpm Del. quantity	: 2100 -	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance
Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	: 2100 -	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5
Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 2100 - : 30.0 -	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	: 2100 - : 30.0 -	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2100 : 30.0 : 1.0	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread - cm3/1000 strokes : 5.0
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2100 - : 30.0 -	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2100 : 30.0 : 1.0 : 2.2	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread - cm3/1000 strokes : 5.0 - FULL-LOAD \$TOP CONTROL LEVER
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2100 : 30.0 : 1.0	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread - cm3/1000 strokes : 5.0
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	: 2100 : 30.0 : 1.0 : 2.2	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread - cm3/1000 strokes : 5.0 - FULL-LOAD \$TOP CONTROL LEVER
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2100 : 30.0 : 1.0 : 2.2	- cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5 - Check tolerance - cm3/1000s. +- : 1.5 - Spread - cm3/1000 strokes : 5.0 - FULL-LOAD \$TOP CONTROL LEVER
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm	: 2100 : 30.0 : 1.0 : 2.2 : 12	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD \$TOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD \$TOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Spread
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0 : 3.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0 : 3.0 : 12	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread
Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 2100 : 30.0 : 1.0 : 2.2 : 12 : 1850 : 33.0 : 3.0	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread

		START TRANSITION
CHECKING LOAD-DEPEN START OF DELIVERY	IDENT	Rated speed rpm : 380 Del. quantity
		+ cm3/1000 strokes : 27.0
DELIVERY DIFFERENCE		+ Tolerance + cm3/1000 str. +-: 10.0
Rated speed rom : Del. quantity		Shutoff solenoid Volt : 12
cm3/1000 strokes : Tolerance		‡
cm3/1000 str. +-: Check tolerance	3.0	+ Rated speed rpm : 180 + Del. quantity
cm3/1000s. +-: Shutoff solenoid	4.0	cm3/1000 strokes : 60.0 Tolerance
Volt :	12	+ cm3/1000 str. +-: 25.0
TIMING-DEVICE TRAVE	L DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm :	1500	‡ <del></del>
Del. quantity cm3/1000 strokes :	-1.2	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
Tolerance cm3/1000 str. +-:		<pre>Dimension K mm : 3,3 Tolerance mm ← : 0,1</pre>
Check tolerance		+ Dimension KF mm : 5,8
cm3/1000S. +-: Shutoff solenoid	0.1	+ Tolerance mm +-: 0,2 + Dimension MS mm : 1,4
Volt :	12	Tolerance mm + : 0,1
DELIVERY DIFFERENCE	:	POTENTIOMETER SET
Rated speed rpm : Del. quantity	1500	1. measurement
cm3/1000 strokes :	1.5	→ voltage Volt : 5,0
Tolerance cm3/1000 str. +-:	1.5	+ 1. measurement + voltage Volt : 0,7 V
Check tolerance cm3/1000s.    +-:	1.5	‡
Shutoff solenoid Volt :	12	CONTROL LEVER POSITION SET
PRESSURE DIFFERENCE		‡
Rated speed rpm : Supply pomp	1500	Control lever position YA mm : 32,834,8
pressure bar :	-1.0	Control Lever
Tolerance bar +-: Shutoff solenoid	0.2	+ position YB mm : 61,568.5
Volt :	12	†
TIMING-DEVICE TRAVE	L DIFFERENCE	End of test-specification sheet
Rated speed rpm : Tolerance mm + :	1500 0.2	+ Lina of test specification sheet
Check tolerance mm    +-:	0.6	‡
Shutoff solenoid Volt :	12	‡
	1 to	1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.11.96 Edition : ISO 4113 Test oil

: 0 460 485 037 Part no. Pump designation: VE5/8F2100L752

Customer-spec. information : VW Customer

Moter : 2,4L SD f. T4 Power KW 55.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + :

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar 147 Tolerance bar + :

: 1 680 750 000 Test lines

Outside diameter : 6.00

2.00 x inside diameter : x length mm 840

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm 4.3 Tolerance mm +-: 0.2 Shutoff solenoid

12 Volt

#### SUPPLY PUMP PRESSURE

1500 Rated speed rpm :

Supply pomp

pressure bar 7.4 Tolerance bar +-: 0.3

Shutoff solenoid

12 Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 36.0

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid Volt

12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540 Del. quantity

cm3/1000 strokes :

7.0

Tolerance

cm3/1000 str. + :0.5

Shutoff solenoid

12 Volt

## IDLE DELIVERY

Rated speed rpm : 415

Del. quantity

cm3/1000 strokes : 2.0

Tolerance

cm3/1000 str. + :1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

### HIGH IDLE SETTING

450 Rated speed rpm :

Qel. quantity

cm3/1000 strokes : 8.0

Tolerance +	
cm3/1000 str. + : 1.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 1790
Rated speed rpm : 2400 Del. quantity	SV travel mm : 6.3
cm3/1000 strokes : 12.0	Tolerance mm + : 0.4 Check
cm3/1000 str. +-: 2.0 +	tolerance mm +-: 0.7 Shutoff solenoid
Volt : 12	· Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1100
Rated speed rpm : 100 + Del. quantity +	SV travel mm : 1.6 Tolerance mm + : 0.4
cm3/1000 strokes : 60.0 Tolerance	- Check - tolerance mm +-: 0.7
cm3/1000 str. +: 25.0 +: Shutoff solenoid	Shutoff solenoid Volt : 12
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT START OF DELIVERY	- Rated speed rpm : 1790 - Supply pomp
SETTING	pressure bar : 8.1 Tolerance bar + : 0.3
DELIVERY DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1500   Del. quantity	Rated speed rpm : 1100
cm3/1000 strokes : -7.0	Supply pomp pressure bar : 6.2
cm3/1000 str. +-: 1.0 +	Tolerance bar + : 0.3 Shutoff solenoid
Volt : 12	· Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1500 + Del. quantity + Telephone   T	Rated speed rpm : 2100 Overflow quantity
cm3/1000 strokes : -0.2	ccm/10s : 97.2 Tolerance
cm3/1000 str. +-: 0.1 +- Shutoff solenoid +	ccm/10s +-: 41.6
Volt : 12	- Check tolerance - ccm/10s +-: 55.5 - Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500	· Volt : 12
Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -1.2	Rated speed rpm : 600 Overflow quantity
Tolerance cm3/1000 str. +-: 0.1	ccm/10s : 63.8 Tolerance
Shutoff solenoid Volt : 12	- ccm/10s +-: 22.2
+	

	l Dal manditu
Check tolerance	+ Del. quantity + cm3/1000 strokes : 36.0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Tolerance
Shutoff solenoid	- cm3/1000 str. +-: 0.5
Volt : 12	Check tolerance
<b>VOCC</b> . 12	- cm3/1000s. +-: 2.2
DELIVERY AND BREAKAWAY CHARACTERISTIC	Shutoff solenoid
PELISENI NIN BREAKANTI CHARACIERIO:IC	Volt : 12
Rated speed rpm : 2400	. 12
Del. quantity	1
cm3/1000 strokes : 12.0	
Tolerance	ELECTR. SHUTOFF
cm3/1000 str. + : 2.0	CONTROL LEVER, IDLE STOP
Check tolerance -	+
cm3/1000s. +-: 4.0	Raited speed rpm : 415
Shutoff solenoid	+ Del. quantity
Volt : 12	cm3/1000 strokes : 1.5
	+ Tolerance
Rated speed rpm : 2300	cm3/1000 str. + : 1.5
Del. quantity	+ Check tolerance
cm3/1000 strokes : 22.0	cm3/1000s. +-: 1.5
Tolerance - cm3/1000 str. +-: 5.0 -	+ Spread + cm3/1000 strokes : 5.0
Check tolerance	T CIID/ 1000 Strokes : J.U
cm3/1000s. +-: 6.0	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	TOLE LOAD STOT CONTROL LEVER
Volt : 12	Rated speed rpm : 415
, ,,,	Del. quantity
Rated speed rpm : 2600	cm3/1000 strokes : 1.5
Del. quantity	+ Tolerance
cm3/1000 strokes : 3.0	+ cm3/1000 str. $+$ : 1.5
Tolerance	+ Spread
cm3/1000 str. +-: 3.0	- cm3/1000 strokes : 5.0
Check tolerance	Check tolerance
cm3/1000s. +-: 3.0	+ cm3/1000s. +-: 1.5
Shutoff solenoid - 12 - 12 - 12	+ Spread - cm3/1000 strokes : 5.0
Volt : 12	- cm3/1000 strokes : 5.0
Rated speed rpm : 2100	$\mathbf{I}$
Del. quantity	
cm3/1000 strokes : 30.0	
Tolerance	RESIDUAL QUANTITY
cm3/1000 str. +-: 1.0	+
Check tolerance	Rated speed rpm : 490
cm3/1000s. +-: 2.2	+ Del. quantity
Shutoff solenoid	+ cm3/1000 strokes : 7.8
Volt : 12	Tolerance
	+ cm3/1000 str. + : 1.0
Rated speed rpm : 600	Check tolerance
Del. quantity - cm3/1000 strokes : 33.8	+ cm3/1000s. + : 2.5 - Shutoff solenoid
cm3/1000 strokes : 33.8 - Tolerance	+ Volt : 12
cm3/1000 str. +-: 1.5	. 12
Check tolerance	1
cm3/1000s. +-: 3.0	
Shutoff solenoid	CHECKING LOAD-DEPENDENT
Volt : 12	START OF DELIVERY
•	+
Rated speed rpm : 1250	DELIVERY DIFFERENCE
;	<del> </del>

Rated speed rpm : 1500 Del. quantity	+ Shutoff solenoid + Volt : 12
cm3/1000 strokes : -10.5	† vott . 12
Tolerance cm3/1000 str. +-: 3.0	Rated speed rpm : 180
Check tolerance cm3/1000s. + : 4.0	+ Del. quantity + cm3/1000 strokes : 60.0
Shutoff solenoid Volt : 12	+ Tolerance + cm3/1000 str. +-: 25.0
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1500	ACCEPTANT AND ADMINISTRATION OF THE PARTY OF
Del. quantity cm3/1000 strokes : -1.2	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Tolerance cm3/1000 str. +- : 0.1	+ Dimension K mm : 3,3 + Tolerance mm + : 0,1
Check tolerance cm3/1000s. + : 0.1	Dimension KF mm : 5,8 Tolerance mm +: 0,2
Shutoff solenoid Volt : 12	+ Dimension MS mm : 1,4 + Tolerance mm +-: 0,2
DELIVERY DIFFERENCE	Ŧ
Rated speed rpm : 1500 Del. quantity	CONTROL LEVER POSITION SET
cm3/1000 strokes : 1.5 Tolerance	
cm3/1000 str. + : 1.5 Check tolerance	Control lever position YA mm : 37,239,2
cm3/1000s. + : 1.5 Shutoff solenoid	- Control lever
Volt : 12	position YB mm : 38,549,5
PRESSURE DIFFERENCE	<u> </u>
Rated speed rpm : 1500 Supply pomp	+ End of test-specification sheet
pressure bar : -1.0 Tolerance bar +-: 0.2	
Shutoff solenoid Volt : 12	1
TIMING-DEVICE TRAVEL DIFFERENCE	<del>1</del>
	+
Rated speed rpm : 1500 Tolerance mm + : 0.2	‡
Check tolerance mm +: 0.6	‡
Shutoff solenoid Volt : 12	Ŧ
	I
START TRANSITION	1
Rated speed rpm : 380 Del. quantity	‡
cm3/1000 strokes : 27.0 Tolerance	<u>†</u>
cm3/1000 str. + : 10.0	+

BOSCH INJ. PUMP T	EST SPECIFICATIONS
Note remarks	
Refer to Service adjustment instru See microcard(s)	ictions.
Edition Test oil	: 05.11.96 : ISO 4113
Part no. Pump designation	: 0 460 414 123 : VE4/11F2000R624-1
Customer-spec. in Customer Motor	nformation : FORD : 2.5L-DI
Power KW	: 51.0
TEST BENCH REQUIR	REMENTS
Calibrating-oil return	. /5
temperature °C Tolerance °C +-	: 45 -: 1
Overflow restriction mm	: 0.75
Inlet press. bar Tolerance bar +	: 0.35 -: 0.05
Test nozzle holde assembly	: 1 688 901 114
Opening pressure bar Tolerance bar +-	: 207 -: 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	2.00 : 450
REMARKS	

Plunger stroke mm Tolerance mm +- Outlet	: 0,52 : 0,05 : B KDEP1151
INJECTION PUMP SET	TING VALUES
TIMING DEVICE TRAN	/Ei.
Rated speed rpm	: 1250
Setting mm Tolerance mm + Shutoff solenoid	: 2.7 : 0.1
Volt	: 12
SUPPLY PUMP PRESSU	JRE
Rated speed rpm Supply pomp	: 1250
pressure bar Tolerance bar +-	: 7.4 : 0.3
Shutoff solenoid	: 12
FULL-LOAD DELIV. W	VITHOUT BOOST PRESSURE
Rated speed rpm Rated speed rpm Del. quantity	: 1150 : 500
cm3/1000 strokes Del. quantity	: 36.0
cm3/1000 strokes	: 28.5
Tolerance cm3/1000 str. +-	: 0.5
Tolerance cm3/1000 str. +	: 0.2
Spread cm3/1000 strokes	: 3.0
Shutoff sclendid Volt	: 12
Shutoff solenoid Volt	: 12
Check tolerance cm3/1000S.	: 4.0
IDLE SETTING	
Rated speed rpm Del. quantity	: 425
cm3/1000 strokes Tolerance	: 10.5
cm3/1000 str. +	: 1.0
Shutoff solenoid Volt	: 12
Spread cm3/1000 strokes	: 3.0
Check tolerance cm3/1000S.	: 4.0

BEGINNING OF DELIVERY

Start of delivery blocking

	- Supply pomp
-	pressure bar : 5.7
+	Tolerance bar + : 0.3
EUR I - LOAN SPEEN DECHILATION	- Shutoff solenoid - Volt : 12
FULL-LOAD SPEED REGULATION	- Volt : 12
Rated speed rpm : 2200 -	Rated speed rpm : 1150
Del. quantity	- Supply pomp
cm3/1000 strokes : 26.0	pressure bar : 7.2
Tolerance - cm3/1000 str. +- : 1.0	Tolerance bar + : 0.3 Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	-
	OVERFLOW QUANTITY
STARTING FUEL DELIVERY	t Rated speed rpm : 500
Rated speed rpm : 100	Rated speed rpm : 500 Overflow quantity
Del. quantity	com/10s : 119.4
cm3/1000 strokes : 45.0	Tolerance
Tolerance -	ccm/10s +-: 22.2
cm3/1000 str. +-: 20.0 Shutoff solenoid	t - Check tolerance
Volt : 12	t ccm/10s + : 22.2
• • • • • • • • • • • • • • • • • • •	Shutoff solenoid
<del>1</del>	Volt : 12
1	r - Rated speed rpm : 1950
1	<pre>Rated speed rpm : 1950 Overflow quantity</pre>
INJECTION—PUMP TEST SPECIFICATIONS	- ccm/10s : 150.0
4	Tolerance
TIMING DEVICE CHARACTERISTIC	ccm/10s +-: 34.7
Rated speed rpm : 2000	t Check tolerance
Tarea speca i piii . Loos	ccm/10s +: 34.7
SV travel mm : 6.4	- Shutoff solenoid
Tolerance mm + : 0.4	- Volt : 12
Check - tolerance mm +-: 0.9 -	† - DELIVERY AND BREAKAWAY CHARACTERISTIC
tolerance mm +-: 0.9 Shutoff solenoid	- DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12	Rated speed rpm : 2200
	Del. quantity
Rated speed rpm : 1000	cm3/1000 strokes : 26.0
SV travel mm : 1.5	├ Tolerance ├ cm3/1000 str. ← : 1.0
SV travel mm : 1.5 - Tolerance mm +-: C.4	Check tolerance
Check	cm3/1000s. +-: 5.0
tolerance mm +-: 0.9	Shutoff solenoid
Shutoff solenoid	- Volt : 12
Volt : 12	Rated speed rpm : 2300
SUPPLY PUMP PRESSURE CHARACTERISTIC	F Rated speed rpm : 2500 
COLUMN TO THE COUNTY COUNTY CENTRALES	cm3/1000 strokes : 12.0
Rated speed rpm : 2000 -	- Check tolerance
Supply pomp	cm3/1000s. +-: 6.0
pressure bar : 9.0	Shutoff solenoid Volt : 12
Tolerance bar + : 0.3 - Shutoff solenoid -	t Volt : 12
Volt : 12	Rated speed rpm : 2400
1	Del. quantity
Rated speed rpm : 500	cm3/1000 strokes : 2.5
D18	
VIQ	

Tolerance		+	Rated speed rpm	:	425
cm3/1000 str. + :	2.5	+	Del. quantity		4 5
Check tolerance cm3/1000s. +-:	2.5	<b>T</b>	cm3/1000 strokes Tolerance	:	1.5
Shutoff solenoid	6.5	I	cm3/1000 str. +-	•	1.5
Volt :	12	1	Spread	•	1.5
		+	cm3/1000 strokes	:	5.0
Aneroid pressure		<del>-</del>	Check tolerance		
hPa :		+	cm3/1000s. +-	:	1.5
101/		†	Spread		5.0
LDA/ HBA stroke mm :	7.2	Ī	cm3/1000 strokes	:	5.0
HBA SCI ORE IIIII .	1.6	Ţ	IDLE DELIVERY		
Rated speed rpm :	1950	1			
Del. quantity		+	Rated speed rpm	:	550
cm3/1000 strokes :	41.5	+	Del. quantity		
Tolerance	4.5	+	cm3/1000 strokes	:	3.0
cm3/1000 str:	1.2	1	Tolerance	_	7.0
Check tolerance cm3/1000s. +-:	2.5	1	cm3/1000 str. +- Check tolerance	:	3.0
Shutoff solenoid	<i>L.J</i>	I	cm3/1009s. +-	:	3.0
Volt :	12	1	Shutoff solenoid	•	J.J
		+	Volt	:	12
Rated speed rpm :	1700	+			
Del. quantity	<b>/0.0</b>	+			
cm3/1000 strokes :	40.0	†			
Tolerance cm3/1000 str. +-:	1.2	1			
Check tolerance	1 • 6	I	• • • • • • • • • • • • • • • • • • • •		
cm3/1000s. +-:	2.5	1	EXHAUST-GAS RECIR	CULA	TION
Shutoff solenoid	-	+			
Volt :	12	++++	Rated speed rpm	:	1250
<b>5</b>	500	+	Del. quantity		50 F
Rated speed rpm : Del. quantity	500	†	cm3/1900 strokes Tolerance	:	22.5
cm3/1000 strokes :	28.5	I	cm3/1000 str. +-	•	0.5
Tolerance	20.5	I	Check tolerance	•	0.5
cm3/1000 str. +-:	0.2	1	cm3/1000s. +-	:	2.5
Check tolerance		+	Shutoff solenoid		
cm3/1000s. +-:	3.0	Ť	Volt	:	12
Shutoff solenoid	12	†	CTART TRANSTITAL		
Volt :	16	1	START TRANSITION		
		I	Rated speed rpm	:	480
		+	Del. quantity		
ELECTR. SHUTOFF		+	cm3/1000 strokes	:	26.0
CONTROL LEVER, IDLE ST	OP .	+	Tolerance		
Dakad aparal mass	/ 25	†	cm3/1000 str. +-	:	6.0
Rated speed rpm : Del. quantity	425	1	Shutoff solenoid Volt		12
cm3/1000 strokes :	1.5	I	VOCE	•	16
Tolerance	1	1			
cm3/1000 str. +-:	1.5	+	Rated speed rpm	:	300
Check tolerance		+	Del. quantity		
cm3/1000s. +-:	1.5	+	cm3/1000 strokes	:	48.0
Spread	5.0	†	Tolerance		15.0
cm3/1000 strokes :	5.0	Ī	cm3/1000 str. +- Shutoff solenoid	·	15.0
FULL-LOAD STOP CONTROL	LEVER	I	Volt	:	12
. JEE EURO DIOI GOMINOE		1		•	
		•			

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.2

Dimension K mm : 2,8
Tolerance mm + : 0,1
Dimension KF mm : 8,4
Tolerance mm + : 0,2
Dimension MS mm : 1,8
Tolerance mm + : 0,2

MICROSWITCH SET

: ARF 20,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 41.0..43.5

Control lever

position Y8 mm : 63.0..75,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 05.11.96 Edition : ISO 4113 Test oil

Part no. : 0 460 414 139 Pump designation: VE4/11F2000R624-3

Customer-spec. information : FORD Customer : 2.5L-DI Motor 51.0 Power KW

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

0.75 restriction mm :

0.35 Inlet press. ber : Tolerance bar +-:

Test nozzle holde

: 1 688 901 114 assembly

Opening pressure

207 bar Tolerance bar + :

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

## REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,52 Tolerance mm +: 0,05

Outlet | : B KDEP1151

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Setting mm 2.7 Tolerance mm 0.1

Shutoff solenoid

Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm :

Supply pomp

pressure bar 7.4 Tolerance bar +-: 0.3

Shutoff solenoid

12 Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

1150 Rated speed rpm : Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 36.0

Del. quantity

cm3/1000 strckes : 28.5

Tolerance cm3/1000 str. + :

Tolerance

cm3/1000 str. +-:0.2

Spread

cm3/1000 strckes : 3.0

Shutoff solenoid

12 Volt

Shutoff solenoid

12 Volt

Check tolerance

cm3/1000s. 4.0

#### IDLE SETTING

425 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 10.5

Tolerance

cm3/1000 str. + :1.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.4.0

+	Supply pomp
+	pressure bar : 5.7
†	Tolerance bar + : 0.3
FULL-LOAD SPEED REGULATION	Shutoff solenoid Volt : 12
TOLL LOND OF LED KLEDCATION	. 12
Rated speed rpm : 2200	Rated speed rpm : 1150
Del. quantity	Supply pomp
cm3/1000 strokes : 26.0	pressure bar : 7.2 Tolerance bar +-: 0.3
cm3/1000 str. +: 1.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
yelt : 12 †	OVERFLOW QUANTITY
STARTING FUEL DELIVERY	OVERFLOW GOANTITE
+	Rated speed rpm : 500
Rated speed rpm : 100	Overflow quantity
Del. quentity + cm3/1000 strokes : 45.0 +	ccm/10s : 119.4 Tolerance
Tolerance	ccm/10s +-: 22.2
cm3/1000 str. + : 20.0	
Shutoff solenoid	Check tolerance
Volt : 12	ccm/10s +-: 22.2 Shutoff solenoid
<b>1</b>	Volt : 12
+	
	Rated speed rpm : 1950 Overflow quantity
INJECTION-PUMP TEST SPECIFICATIONS	ccm/10s : 150.0
+	Tolerance
TIMING DEVICE CHARACTERISTIC +	ccm/10s +-: 34.7
Rated speed rpm : 2000	Check tolerance
+	ccm/10s +-: 34.7
SV travel mm : 6.4	Shutoff solenoid
Tolerance mm +-: 0.4 +- Check +-	Volt : 12
tolerance mm +: 0.9	DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid	
Volt : 12 +	Rated speed rpm : 2200 Del. quantity
Rated speed rpm : 1000	cm3/1000 strokes : 26.0
+	Tolerance
SV travel mm : 1.5	cm3/1000 str. +: 1.0
Tolerance mm + : 0.4 + Check	Check tolerance cm3/1000s. +-: 5.0
tolerance mm +: 0.9	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12 +	Dated aread pure . 2700
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 2300 Del. quantity
TOUR THE PROPERTY OF THE PROPE	cm3/1000 strokes : 12.0
Rated speed rpm : 2000	Check tolerance
Supply pomp + pressure bar : 9.0 +	cm3/1000s. + : 6.0 Shutoff solenoid
Tolerance bar + : 0.3	Volt : 12
Shutoff solenoid +	
Volt : 12 +	Rated speed rpm : 2400
Rated speed rpm : 500	Del. quantity cm3/1000 strokes : 2.5

Tolerance		+	Rated speed rpm	:	425	
cm3/1000 str. + :	2.5	+	Del. quantity			
Check tolerance		†	cm3/1000 strokes	:	1.5	
cm3/1000s. +-:	2.5	†	Tolerance		4 5	
Shutoff solenoid Volt :	12	†	cm3/1000 str. +-	:	1.5	
voce :	12	Ī	Spread cm3/1000 strokes		5.0	
Aneroid pressure		I	Check tolerance	٠	٦.٠	
hPa :	•	I	cm3/1000s. +-	•	1.5	
	•	1	Spread	•	,,,,	
LDA/		+	cm3/1000 strokes	:	5.0	
HBA stroke mm :	7.2	+				
		+	IDLE DELIVERY			
Rated speed rpm :	: 1950	†				
Del. quantity		†	Rated speed rpm	:	550	
cm3/1000 strokes :	41.5	• †	Del. quantity	_	3.0	
Tolerance cm3/1000 str. +-:	1.2	Ī	cm3/1000 strokes Tolerance	:	3.0	
Check tolerance	1.6	I	cm3/1000 str. +		3.0	
cm3/1000s. +-:	2,5	1	Check tolerance	•	5.0	
Shutoff solenoid		1	cm3/1000s. +-	:	3.0	
Volt :	: 12	+	Shutoff solenoid	Ť		
		+	Volt	:	12	
Rated speed rpm :	: 1700	+				
Del. quantity		†				
cm3/1000 strokes :	40.0	†				
Tolerance	1.2	†				
cm3/1000 str. +- : Check tolerance	1.2	1				
cm3/1000s. +-:	2.5	I	EXHAUST-GAS RECIR		TTON	
Shutoff solenoid		I	EVIINODI - GND VECTV		(1 1014	
Volt	: 12	1	Rated speed rpm	:	1250	
		+	Del. quantity	•		
Rated speed rpm :	500	+	cm3/1000 strokes	:	22.5	
Del. quantity		+	Tolerance			
cm3/1000 strokes :	28.5	+	cm3/1000 str. +-	:	0.5	
Tolerance	. 0 0	†	Check tolerance		2.5	
cm3/1000 str. +-:		†	cm3/1000s. +-	:	2.5	
Check tolerance cm3/1000s. +:		Ī	Shutoff solenoid Volt		12	
Shutoff solenoid	J.G	I	VOCC	•	12	
Volt	: 12	1	START TRANSITION			
• • • •	•	1				
		+	Rated speed rpm	:	480	
		<del></del> - +	Del. quantity			
ELECTR. SHUTOFF		+	cm3/1000 strokes	:	26.0	
CONTROL LEVER, IDLE	STOP	†	Tolerance		/ ^	
Damad anaad a	/:25	†	cm3/1000 str. +-	:	6.0	
Rated speed rpm : Del. quantity	425	<b>†</b>	Shutoff solenoid Volt		12	
cm3/1000 strokes :	1.5	I	VOLL	•	12	
Tolerance		Ţ				
cm3/1000 str. +:	1.5	1	Rated speed rpm	:	300	
Check tolerance		+	Del. quantity			
cm3/1000s. +-:	1.5	+	cm3/1000 strokes	:	48.0	
Spread		+	Tolerance		45 -	
cm3/1000 strokes :	5.0	†	cm3/1000 str. +-	:	15.0	
EUL LOAD OTOD CONT	FROI LEVER	†	Shutoff solenoid		10	
FULL-LOAD STOP CONT	INUL LEVEK	Ī	Volt	:	12	
		T				

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

7.2

HBA stroke mm : 2,8
Dimension K mm : 2,8
Tolerance mm + : 0,1 Dimension KF mm : 8,4 Tolerance mm +: 0,2 Dimension MS mm : 1,8 Tolerance mm

MICROSWITCH SET

: ARF 20,0

CONTROL LEVER POSITION SET

Control lever

: 41,0..44,0 position YA mm

Control lever

: 63,0..75,0 position YB mm

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.11.96 Edition : ISO 4113 Test oil

Part no. **:** 0 460 426 254 Pump designation : VE6/12F1250R671

Customer-spec. information Customer : CUMMINS Motor : 6 BTAA Power KW 96.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 109 assembly

Opening pressure

Tolerance bar +-:

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

### REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,3

Tolerance mm +: 0.02(0.06)

Outlet | : D

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1100

Aneroid pressure

1000

Setting mm 1.8 Tolerance mm + : 0.2 Shutoff solenoid Volt 24

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1100

Aneroid pressure

hPa 1000

Supply pomp pressure bar

7.0 Tolerance bar + : 0.3

Shutoff solenoid

Valt 24

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850

Aneroid pressure

1000 Del. quantity

cm3/1000 strokes :

83.0

Tolerance

 $cm3/1000 str. \leftarrow :$ 

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 5.0

Shutoff solenoid Volt

24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 61.0

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 5.0

Shutoff solenoid

24

Check tolerance

cm3/1000s.6.0

Check tolerance cm3/1000s. : 5.0	Rated speed rpm : 1000 Aneroid pressure
IDLE SETTING	hPa : 1000
Rated speed rpm : 370 Del. quantity	+ SV travel mm : 1.0 + Tolerance mm + : 0.6 + Check
cm3/1000 strokes : 9.5 Tolerance	tolerance mm +: 0.6 Shutoff solenoid
cm3/1000 str. + : 2.0 Shutoff solenoid	Volt : 24
Volt : 24 Spread	Rated speed rpm : 450
cm3/1000 strokes : 5.5 Check tolerance	SV travel mm : 2.1 Tolerance mm +: 0.5
cm3/1000s. : 7.0	+ Check + tolerance mm + : 0.7
	Shutoff solenoid Volt : 24
FULL-LOAD SPEED REGULATION	KSB/AFB Volt : 24
Rated speed rpm : 1400 Pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity cm3/1000 strokes : 36.5	Rated speed rpm : 1250 Aneroid pressure
Tolerance cm3/1000 str. +-: 3.0	hPa : 1000 + Supply pomp
Shuroff solenoid Volt : 24	pressure bar : 7.7 Tolerance bar +: 0.3
STARTING FUEL DELIVERY	+ Shutoff solenoid + Volt : 24
Rated speed rpm : 100	Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 85.0 Tolerance	+ Aneroid pressure + hPa : 1000
cm3/1000 str. + : 15.0 Shutoff solenoid	+ Supply pomp + pressure bar : 4.7 + Tolerance bar +: 0.3
Volt : 24	Shutoff solenoid Volt : 24
	DVERFLOW QUANTITY
INJECTION-PUMP TEST SPECIFICATIONS	Rated speed rpm : 500
TIMING DEVICE CHARACTERISTIC	+ Overflow quantity + ccm/10s : 59.7 + Tolerance
Rated speed rpm : 1250	ccm/10s +: 22.2
Aneroid pressure hPa : 1000	Check tolerance ccm/10s +: 22.2
SV travel mm : 2.3 Tolerance mm + : 0.4	Shutoff solenoid Volt : 24
Check tolerance mm + : 0.7	Rated speed rpm : 1250 Aneroid pressure
Shutoff solenoid Volt : 24	+ hPa : 1000 + Overflow quantity
	+ ccm/10s : 83.3

ccm/10s +-	: 27.7	+ Del. quantity + cm3/1000 strokes : 86.0
		+ Tolerance
Check tolerance ccm/10s +-	: 27.7	cm3/1000 str. +-: 2.0 Check tolerance
Shutoff solenoid Volt	: 24	+ cm3/1000s. + : 3.5 + Shutoff solenoid
DELIVERY AND BREAK	AWAY CHARACTERISTI	r Volt : 24
	4100	Rated speed rpm : 500
Aneroid pressure		+ Aneroid pressure + hPa : 1000
hPa Del. quantity	: 1000	Del. quantity cm3/1000 strokes : 92.0
cm3/1000 strokes Tolerance	: 36.5	+ Tolerance + cm3/1000 str. +-: 5.0
cm3/1000 str. +- Check tolerance	: 3.0	Shutoff solenoid Volt : 24
cm3/1000s. +-	: 8.0	+
Shutoff solenoid Volt	: 24	Rated speed rpm : 850 Aneroid pressure
Rated speed rpm	: 1445	+ hPa : 1000 + Del. quantity
Aneroid pressure hPa	: 1000	+ cm3/1000 strokes : 83.0 + Tolerance
Del. quantity cm3/1000 strokes	: 17.0	cm3/1000 str. +-: 0.5 Check tolerance
Check tolerance		+ cm3/1000s. +-: 3.0 + Shutoff solenoid
Shutoff solenoid		Volt : 24
Volt	: 24	Ţ <del></del>
Rated speed rpm Aneroid pressure	: 1500	# MECHANICAL SHUTOFF
hPa	: 1000	+ Rated speed rpm : 1250 + Aneroid pressure
Det. GUANTITY		
Del. quantity cm3/1000 strokes	: 1.5	+ hPa : 1000
cm3/1000 strokes Tolerance cm3/1000 str. +-		Del. quantity cm3/1000 strokes : 1.5
cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: 1.5	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 1.5	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5
cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt	: 1.5 : 1.5	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: 1.5 : 1.5 : 24 : 600	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid
cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	: 1.5 : 1.5 : 24 : 600 : 300	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 24  ELECTR. SHUTOFF
cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 1.5 : 1.5 : 24 : 6C0 : 300 : 72.0	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	: 1.5 : 1.5 : 24 : 600 : 300 : 72.0 : 0.5	Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 300 Del. quantity
cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 1.5 : 1.5 : 24 : 600 : 300 : 72.0 : 0.5 : 4.0	Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt: 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 300 Del. quantity cm3/1000 strokes: 1.5 Tolerance
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 1.5 : 1.5 : 24 : 600 : 300 : 72.0 : 0.5	Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt: 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 300 Del. quantity cm3/1000 strokes: 1.5
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm	: 1.5 : 1.5 : 24 : 600 : 300 : 72.0 : 0.5 : 4.0	Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +-: 1.5 Shutoff solenoid Volt: 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 300 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +-: 1.5
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 1.5 : 1.5 : 24 : 600 : 300 : 72.0 : 0.5 : 4.0 : 24	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance

Rated speed rpm	:	300	
Del. quantity cm3/1000 strokes	;	1.5	
Tolerance cm3/1000 str. +-		1.5	
Check tolerance	•		
cm3/1000s. +-	:	1.5	
IDLE DELIVERY			
Rated speed rpm	:	410	
Del. quantity cm3/1000 strokes	:	4.5	
Tolerance cm3/1000 str. +	:	1.5	
Check tolerance cm3/1000s. +-		1.5	
Shutoff solenoid	•		
Volt	•	24	
START TRANSITION			
Rated speed rpm	:	220	
Del. quantity cm3/1000 strokes	:	75.0	
Tolerance cm3/1000 str. +-	:	25.0	
Shutoff solenoid Volt	:	24	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	<b>∟</b> ∓	
Rated speed rpm	:	130	
Del. quantity cm3/1000 strokes	:	100.0	
Tolerance cm3/1000 str. +-			
Shutoff solenoid	•	20.0	
Volt	:	24	
ASSEMBLY AND ADJU	STME	UT DIMENSION	
			J
Dimension K mm Tolerance mm +-		,1	
Dimension KF mm MS1 dimension mm	: K	OT .1	
MS1 dimension mm Tolerance mm +-	: 0	,1	
CONTROL LEVER POS	ITIO	V	
SET	_,_0		

Control lever : 34,8..38,8 position YA mm

Control lever position YB mm : 43,0..48,6

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.11.96 Test oil : ISO 4113

Part no. : 0 460 484 113 Pump designation : VE4/8F2300R691

Customer-spec. information

Customer : FIAT-AUTO

Motor : M708HT17..T-soft

Power KW : 48.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,9 Outlet : A

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.9 Tolerance mm + : 0.2 Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Supply pemp

pressure bar : 5.9 Tolerance bar + : 0.3

Shutoff solenoid Volt

KSB/AFB Volt : 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1500

Del. quantity

cm3/1000 strokes : 35.2

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

#### IDLE SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 12.6

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 2.5

KSB/AFB Volt : 12

	( Charle
	+ Check + tolerance mm +-: 2.0
FULL-LOAD SPEED REGULATION	+ tolerance mm +-: 2.0 + Shutoff solenoid
FULL TOAD SPEED REGULATION	+ Volt : 12
Rated speed rpm : 2400	I voit . 12
Del. quantity	Rated speed rpm : 700
cm3/1000 strokes : 31.6	T Rated speed rpm . 700
Tolerance	SV travel mm : 2.5
cm3/1000 str. +: 3.0	+ Tolerance mm +-: 1.5
Shutoff solenoid	Check
Volt : 12	tolerance mm + : 2.0
	+ Shutoff solenoid
KSB/AFB Volt : 12	+ Volt : 12
	<del>}</del>
STARTING FUEL DELIVERY	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
Rated speed rpm : 100	+ Rated speed rpm : 2000
Del. quantity	+ Supply pomp
cm3/1000 strokes : 50.0	+ pressure bar : 7.4
Tolerance	+ Tolerance bar + : 0.3
cm3/1000 str. +-: 15.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	† Kon (450 - 141)
KSB/AFB Volt : 12	+ KSB/AFB Volt : 12
KSB/AFB Volt : 12	Rated speed rpm : 900
	+ Rated speed rpm : 900 + Supply pomp
	pressure bar : 4.1
	Tolerance bar + : 0.3
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
	+
TIMING DEVICE CHARACTERISTIC	+ KSB/AFB Volt : 12
	<del>}</del>
Rated speed rpm : 2000	+ OVERFLOW QUANTITY
	+
SV travel mm : 7.9	+ Rated speed rpm : 2200
Tolerance mm + : 0.4	+ Overflow quantity
Check	+ ccm/10s : 86.1
tolerance mm + : 0.7	+ Tolerance
Shutoff solenoid	+ ccm/10s +-: 27.7
Volt : 12	† Charle de Lamana
KSB/AFB Volt : 12	+ Check tolerance + ccm/10s + : 27.7
ASB/AFB VOLL : 12	Shutoff solenoid
Rated speed rpm : 900	Volt : 12
Nated Speed (Mill : 700	
SV travel mm : 1.1	KSB/AFB Volt : 12
Tolerance mm → : 0.4	
Check	+ Rated speed rpm : 700
tolerance mm + : 0.7	+ Overflow quantity
Shutoff solenoid	+ ccm/10s : 58.3
Volt : 12	† Tolerance
	+ ccm/10s + : 16.6
KSB/AFB Volt : 12	†
	+ Check tolerance
Rated speed rpm : 450	+ ccm/10s +: 16.6
	+ Shutoff solenoid
SV travel mm : 1.8	† Volt : 12
Tolerance mm +-: 1.5	†

KSB/AFB Volt : 12	KSB/AFB Volt : 12
DELIVERY AND BREAKAWAY CHARACTERISTIC	Rated speed rpm : 1500 Del. quantity
Rated speed rpm : 2400 - Del. quantity -	cm3/1000 strokes : 35.2
cm3/1000 strokes : 31.6 - Tolerance -	cm3/1000 str. + : 0.5
cm3/1000 str. +-: 3.0 Check tolerance	+ cm3/1000s. + : 2.0 + Shutoff solenoid
cm3/1000s. +-: 5.0 Shutoff solenoid	Volt : 12
Volt : 12	
KSB/AFB Volt : 12	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Rated speed rpm : 2700 - Del. quantity	Rated speed rpm : 450
cm3/1000 strokes : 8.3 - Check tolerance -	Del. quantity cm3/1000 strokes : 1.5
cm3/1000s. + : 5.0 - Shutoff solenoid -	+ Tolerance + cm3/1000 str. ++ : 1.5
Volt : 12	+ Check tolerance + cm3/1000s. +-: 1.5
KSB/AFB Volt : 12	Spread cm3/1000 strokes : 5.0
Rated speed rpm : 2900  Del. quantity - cm3/1000 strokes : 1.5	KSB/AFB Volt : 12
Tolerance cm3/1000 str. +-: 1.5	FULL-LOAD STOP CONTROL LEVER
Check tolerance cm3/1000s. +-: 1.5	Rated speed rpm : 450 Del. quantity
Shutoff solenoid	cm3/1000 strokes : 1.5
KSB/AFB Volt : 12	cm3/1000 str. +-: 1.5 Spread
Rated speed rpm : 2200 -	cm3/1000 strokes : 5.0 Check tolerance
Del. quantity - cm3/1000 strokes : 38.7	+ cm3/1000s. + : 1.5 + Spread
Tolerance cm3/1000 str. +-: 1.5	cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +-: 2.3 Shutoff solenoid	KSB/AFB Volt : 12
Volt : 12	- IDLE DELIVERY - Rated speed rpm : 550
KSB/AFB Volt : 12	Del. quantity cm3/1000 strokes : 2.0
Rated speed rpm : 700  Del. quantity	Tolerance cm3/1000 str. +-: 2.0
cm3/1000 strokes : 34.6 - Tolerance	Check tolerance cm3/1000s. +-: 2.0
cm3/1000 str. +-: 1.5 Check tolerance	Shutoff solenoid Volt : 12
cm3/1000s. + : 2.3 - Shutoff solenoid -	KSB/AFB Volt : 12
Volt : 12	+

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	22.6
Tolerance cm3/1000 str. +- Check tolerance	:	2.5
cm3/1000s. +-	:	4.5
Volt	:	12
KSB/AFB Volt	:	12

## EXHAUST-GAS RECIRCULATION

Rated speed rpm	:	1000
Del. quantity cm3/1000 strokes	:	9.3
Tolerance cm3/1000 str. +	:	1.0
Check tolerance cm3/1000s. +-	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt		12

## START TRANSITION

kated speed rpm	ï	212
Del. quantity cm3/1000 strokes	:	34.0
Tolerance cm3/1000 str. +- Shutoff solenoid	:	10.0
Volt	:	12
KSB/AFB Volt	:	12

Rated speed rpm	•	350
Del. quantity cm3/1000 strokes	:	58.0
Tolerance cm3/1000 str. +	:	10.0
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K n	100	:	3,3
Tolerance	mm	+-	:	0,1
Dimension	KF	mm	:	6,0

Tolerance	mm	+	:	0,2
Dimension	MS	mm	:	1,3
Tolerance	mm	+	:	0,2

## POTENTIOMETER

SET

1. measu	urement		
voltage	Volt	:	5,0

1. measurement

voltage Volt : 1,41+-0,02

2. measurement

voltage Volt : ARF 12,0

# CONTROL LEVER POSITION SET

Control lever position YA mm : 38,1..40,1

Control lever

position YB mm : 38,4..46,4

End of test-specification sheet

	+
BOSCH INJ. PUMP TEST SPECIFICATIONS	Plunger stroke mm : 0,35 Tolerance mm + : 0,05
Note remarks	Outlet : B KDEP1151
Refer to Service Info for test and adjustment instructions. See microcard(s) W400/	INJECTION PUMP SETTING VALUES
5.13.43	TIMING DEVICE TRAVEL
Edition : 02.12.96 Test oil : ISO 4113	Rated speed rpm : 1250
Part no. : 0 460 414 141 Pump designation : VE4/11F2000R686	Setting mm : 2.7 Tolerance mm +-: 0.1 Shutoff solenoid
Customer-spec. information	. + Volt : 12
Customer : FORD Motor : 2.5L-DI 70 PS	SUPPLY PUMP PRESSURE
Power KW : 51.0	Rated speed rpm: : 1250 Supply pomp pressure bar : 7.4
TEST DENICH DECHITOEMENTS	+ pressure bar : 7.4 + Tolerance bar +-: 0.3
TEST BENCH REQUIREMENTS	+ Shutoff solenoid
Calibrating-oil	Volt : 12
temperature °C : 45 Tolerance °C +- : 1	FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Overflavi	+ Rated speed rpm : 1150
Overflow restriction mm : 0.75	+ Rated speed rpm : 500 + Del. quantity
restriction inn : 0.73	- cm3/1000 strokes : 35.8 - Del. quantity
Inlet press. bar : 0.35 Tolerance bar +-: 0.05	cm3/1000 strokes : 31.2
	- cm3/1000 str. +-: 0.5 - Tolerance
Test nozzle holde	+ cm3/1000 str. + : 0.2
assembly : 1 688 901 114	+ Spread + cm3/1000 strokes : 3.0
Opening pressure : 207	+ Shutoff solenoid + Volt : 12
Tolerance bar + : 3	Shutoff solenoid
	+ Volt : 12 + Check tolerance
Test Lines : 1 680 750 073	= cm3/1000s. : 4.0
Outside diameter : 6.00	IDLE SETTING
x inside diameter: 2.00 x length mm : 450	Rated speed rpm : 425 Del. quantity
	- cm3/1000 strokes : 7.8 Tolerance
REMARKS	cm3/1000 str. +: 1.0 Shutoff solenoid
	Volt : 12 - Spread
BEGINNING OF DELIVERY	- cm3/1000 strokes : 3.0 - Check tolerance
Start of delivery blocking	- cm3/1000s. : 4.0

	+ Supply pomp
	pressure bar : 5.7
	Tolerance bar + : 0.3
	Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
Rated speed rpm : 2200 Del. quantity	Rated speed rpm : 1150
cm3/1000 strokes : 31.5	+ Supply pomp - pressure bar : 7.2
Tolerance	Tolerance bar +-: 0.3
cm3/1000 str. +: 1.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	+ OVERFLOW QUANTITY
STARTING FUEL DELIVERY	†
Rated speed rpm : 100	Rated speed rpm : 500
Rated speed rpm : 100  Del. quantity	+ Overflow quantity + ccm/10s : 119.4
cm3/1000 strokes : 48.2	Tolerance . 177.4
Tolerance	+ ccm/10s + : 16.6
cm3/1000 str. +-: 20.0	+
Shutoff solenoid	+ Check tolerance
Volt : 12	+ ccm/10s +: 16.6
	+ Shutoff solenoid
	+ Volt : 12
	Rated speed rpm : 1950
	Overflow quantity
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s : 150.0
	+ Tolerance
TIMING DEVICE CHARACTERISTIC	+ Tolerance + ccm/10s ++: 27.7
	ccm/10s +: 27.7
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000	ccm/10s +: 27.7 Check tolerance
Rated speed rpm : 2000	ccm/10s +: 27.7 + Check tolerance + ccm/10s +: 27.7
	ccm/10s +: 27.7 Check tolerance
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check	ccm/10s + : 27.7 
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.9	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.4 Shutoff solenoid	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.9	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.4 Shutoff solenoid	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Supply pomp	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance cm3/1000s. +: 6.0
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Supply pomp pressure bar : 9.0	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance cm3/1000s. +: 6.0 Shutoff solenoid
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Supply pomp pressure bar : 9.0 Tolerance bar +: 0.3	ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance cm3/1000s. +: 6.0
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Supply pomp pressure bar : 9.0	Check tolerance ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm -: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Supply pomp pressure bar : 9.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12	Check tolerance ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance cm3/1000s. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Del. quantity  Rated speed rpm : 2400 Del. quantity
Rated speed rpm : 2000  SV travel mm : 6.4 Tolerance mm : 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  Rated speed rpm : 1000  SV travel mm : 1.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.9 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Supply pomp pressure bar : 9.0 Tolerance bar +: 0.3 Shutoff solenoid	Check tolerance ccm/10s +: 27.7  Check tolerance ccm/10s +: 27.7  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 31.5  Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 18.4 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2400

Tolerance cm3/1000 str. +-: 2.5					
cm3/1000 str. +-: 2.5	+	Rated speed rpm	:	425	
	5 1	Del. quantity			
Check tolerance	+	cm3/1000 strokes	:	1.5	
cm3/1000s. +-: 2.5	5 +	Tolerance			
Shutoff solenoid	+	cm3/1000 str. +-	:	1.5	
Volt : 12	<del>}</del>	Spread			
	+	cm3/1000 strokes	:	5.0	
Aneroid pressure	+	Check tolerance			
hPa :	†	cm3/1000s. +-	:	1.5	
	†	Spread			
LDA/	, †	cm3/1000 strokes	:	5.0	
HBA stroke mm : 7,7	<b>′</b> †	TOLE DEL THEORY			
Rated speed rpm : 1950	†	IDLE DELIVERY			
	†	Dated aread arm		475	
Del. quantity cm3/1000 strokes : 43.8	, †	Rated speed rpm Del. quantity	•	4/2	
Tolerance	^	cm3/1000 strokes		3.8	
cm3/1000 str. +-: 1.2	J	Tolerance	•	3.0	
Check tolerance	Ī	cm3/1000 str. +-		3.0	
cm3/1000s. +: 2.5	5	Check tolerance	•	5.0	
Shutoff solenoid	Ţ	cm3/1000s. +-	:	3.0	
Volt : 12		Shutoff solenoid	•		
•	<u> </u>	Volt	:	12	
Rated speed rpm : 1700	+				
Del. quantity	1				
cm3/1000 strokes : 41.0	) <del>}</del>				
Tolerance	+				
cm3/1000 str. +-: 1.2	2 +				
Check tolerance	_ +			·	
cm3/1000s. + : 2.5	5 +	EXHAUST-GAS RECIRC	CULAT	ION	
Shutoff solenoid	<u> </u>			4	
Volt : 12	<del>?</del> †	Rated speed rpm	:	1250	
Debad weed may 500	†	Del. quantity		24 5	
Rated speed rpm : 500	†	cm3/1000 strokes Tolerance	:	26.5	
Del. quantity	J			0.5	
cm3/1000 strokes : 31.2	·	cm3/1000 str. +	:	0.5	
cm3/1000 strokes : 31.2 Tolerance	+	cm3/1000 str. +- Check tolerance			
<pre>cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. +-: 0.2</pre>	+	cm3/1000 str. + Check tolerance cm3/1000s. +	:	0.5 2.5	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. +-: 0.2 Check tolerance	2	cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	:	2.5	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. +-: 0.2 Check tolerance cm3/1000s. +-: 3.0	2	cm3/1000 str. + Check tolerance cm3/1000s. +	:		
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. +-: 0.2 Check tolerance	2 +	cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	:	2.5	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	2 +	cm3/1000 str. + Check tolerance cm3/1000s. +- Shutoff solenoid Volt	:	2.5 12	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	2 +	cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt START TRANSITION Rated speed rpm	:	2.5 12	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12	2 +	cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity	:	2.5 12 480	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12	2 +	cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes	:	2.5 12 480	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12	2 +	cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	2.5 12 480 28.6	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	2 +	cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: : : : : : : : : : : : : : : : : : : :	2.5 12 480 28.6	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425	2 +	cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	2.5 12 480 28.6 6.0	
cm3/1000 strokes : 31.2 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity		cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: : : : : : : : : : : : : : : : : : : :	2.5 12 480 28.6	
cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5		cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	2.5 12 480 28.6 6.0	
cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance		cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	:	2.5 12 480 28.6 6.0 12	
cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5		cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm	:	2.5 12 480 28.6 6.0 12	
cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance		cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity  Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	2.5 12 480 28.6 6.0 12	
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cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread		cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	2.5 12 480 28.6 6.0 12 300 45.2	
cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5		cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. +-		2.5 12 480 28.6 6.0 12 300 45.2	
cm3/1000 strokes: 31.3 Tolerance cm3/1000 str. +: 0.3 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 13  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0		cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes		2.5 12 480 28.6 6.0 12 300 45.2 15.0	
cm3/1000 strokes: 31.2 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 425 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread		cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. +-		2.5 12 480 28.6 6.0 12 300 45.2	

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7,7
Dimension K mm : 2,8
Tolerance mm +-: 0,1
Dimension KF mm : 8,4
Tolerance mm +-: 0,2

Dimension MS mm : 1,8
Tolerance mm +: 0,2

MICROSWITCH SET

: ARF 20,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 42,8..45,8

Control lever

position YB mm : 65,5..75,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.11.96 Edition : ISO 4113 Test oil

Part no. : 0 460 485 035 Pump designation: VE5/8F2100L746

Customer-spec. information : VW Customer Motor : 2.4L SD 55.0 Power KW

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar +:

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

bar 3 Tolerance bar +-:

: 1 680 750 000 Test lines

Outside diameter : 6.00

2.00 x inside diameter : 840 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

4.3 Setting mm Tolerance mm + : 0.2 Shutoff solenoid 12

Volt

## SUPPLY PUMP PRESSURE

1500 Rated speed rpm : Supply pomp pressure bar 7.4 0.3 Tolerance bar + : Shutoff solenoid

12 Volt

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 36.5 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt

## IDLE SETTING

Rated speed rpm 415 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-:1.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s.3.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm 2400 Del. quantity cm3/1000 strokes : 12.0

Tolerance

cm3/1000 str. +-:2.0

Shutoff solenoid Volt

12

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity		+ Check
cm3/1000 strokes	: 60.0	+ tolerance mm + : 0.7
Tolerance	. 00.0	+ Shutoff solenoid
cm3/1000 str. +-	: 25.0	+ Volt : 12
Shutoff solenoid	۵.0	7 12
Volt	: 12	CURRILY DUMP DESCUES CHARACTERICTIC
VOCC	. 12	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
		T Detail aread one 1700
		+ Rated speed rpm : 1790
		+ Supply pomp
LOAD-DEPENDENT STAF	RT OF DELIVERY	+ pressure bar : 8.1
SETTING		+ Tolerance bar + : 0.3
		+ Shutoff solenoid
DELIVERY DIFFERENCE	<b>E</b>	+ Volt : 12
		+
Rated speed rpm	: 1500	+ Rated speed rpm : 1100
Del. quantity	_	+ Supply pomp
cm3/1000 strokes	: -7.0	+ pressure bar : 6.2
Tolerance		+ Tolerance bar ← : 0.3
cm $3/1000$ str. $+-$ :	: 1.0	+ Shutoff solenoid
Shutoff solenoid		12 volt : 12
Volt	: 12	+
		+ OVERFLOW QUANTITY
PRESSURE DIFFERENCE	E	1
		+ Rated speed rpm : 2100
Rated speed rpm	: 1500	+ Overflow quantity
Del. quantity		+ ccm/10s : 97.2
cm3/1000 strokes	: <del>-</del> 0.2	+ Tolerance
Tolerance	. 0.2	+ ccm/10s + : 41.6
cm3/1000 str. +	: 0.1	1 001111 100
Shutoff solenoid		+ Check tolerance
Volt	12	+ ccm/10s + : 55.5
VOCC		+ Shutoff solenoid
TIMING-DEVICE TRAVE	EI NIEEEDENCE	+ Volt : 12
TITLE DEVICE TRAVE	LE DITTENDICE	
Rated speed rpm	• 1500	Rated speed rpm : 600
Del. quantity	. 1500	+ Overflow quantity
cm3/1000 strokes	: -1.2	+ ccm/10s : 63.8
	: -1.2	
Tolerance	. 0.1	+ Tolerance
cm3/1000 str. + :	: 0.1	+ ccm/10s + : 22.2
Shutoff solenoid	. 42	Charle Astanana
Volt	: 12	+ Check tolerance
		+ ccm/10s +: 34.7
		+ Shutoff solenoid
INJECTION-PUMP TEST	I SPECIFICATIONS	+ Volt : 12
		†
TIMING DEVICE CHARA	ACTERISTIC	† DELIVERY AND BREAKAWAY CHARACTERISTIC
	4868	†
Rated speed rpm ::	: 1790	+ Rated speed rpm : 2400
		+ Del. quantity
SV travel mm	: 6.3	+ cm3/1000 strokes : 12.0
Tolerance mm +-:	: 0.4	+ Tolerance
Check		+ cm3/1000 str. + : 2.0
tolerance mm +	: 0.7	+ Check tolerance
Shutoff solenoid		+ cm3/1000s. $+$ : 4.0
Volt	: 12	+ Shutoff solenoid
		+ Volt : 12
Rated speed rpm	: 1100	+
·		+ Rated speed rpm : 2300
SV travel mm	: 1.6	+ Del. quantity
Tolerance mm +- :		+ cm3/1000 strokes : 22.0
		•

Tal		1 Acres de
Tolerance	5.0	+ Spread
cm3/1000 str. +:	5.0	+ cm3/1000 strokes : 5.0
Check tolerance	4.0	FULL LOAD OTOD CONTROL LEUED
cm3/1000s. +:	6.0	† FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	42	T
Volt :	12	+ Rated speed rpm : 415
Data da mara da ma	2/00	+ Del. quantity
Rated speed rpm :	2600	+ cm3/1000 strokes : 1.5
Del. quantity	7.6	+ Tolerance
cm3/1000 strokes :	3.0	+ cm3/1000 str. + : 1.5
Tolerance	7.0	+ Spread
cm3/1000 str. +:	3.0	+ cm3/1000 strokes : 5.0
Check tolerance	7.0	† Check tolerance
cm3/1000s. +:	3.0	+ cm3/1000s. +: 1.5
Shutoff solenoid	42	+ Spread
Volt :	12	+ cm3/1000 strokes : 5.0
Dated aread are	2100	Ť
Rated speed rpm : Del. quantity	2100	Ť
cm3/1000 strokes :	<b>30.</b> 5	T
Tolerance	<b>3</b> 0.5	T
cm3/1000 str. +:	1.0	T
Check tolerance	1.0	CHECKING LOAD-DEPENDENT
cm3/1000s. +-:	2.2	+ START OF DELIVERY
Shutoff solenoid	2.2	T STANT OF MELIAENT
Volt :	12	DELIVERY DIFFERENCE
1011	12	- DECEMBER OF THE PROPERTY OF
Rated speed rpm :	600	Rated speed rpm : 1500
Del. quantity		+ Del. quantity
cm3/1000 strokes :	34.8	+ cm3/1000 strokes : -10.5
Tolerance		+ Tolerance
cm3/1000 str. +-:	1.5	+ cm3/1000 str. $+$ : 3.0
Check tolerance		- Check tolerance
cm3/1000s. +-:	3.0	+ cm3/1000s. $+$ : 4.0
Shutoff solenoid		+ Shutoff solenoid
Volt :	12	+ Volt : 12
		+
Rated speed rpm :	1250	+ TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity		+
cm3/1000 strokes :	<b>36.</b> 5	+ Rated speed rpm : 1500
Tolerance		+ Del. quantity
cm3/1000 str. +-:	<b>0.</b> 5	├ cm3/1000 strokes : -1.2
Check tolerance	2.2	+ Tolerance
cm3/1000s. +:	2.2	+ cm3/1000 str. +: 0.1
Shutoff solenoid	42	+ Check tolerance + cm3/1000s. +-: 0.1
Volt :	12	
		+ Shutoff solenoid + Volt : 12
		I vocc . ''
ELECTR. SHUTOFF		→ DELIVERY DIFFERENCE
CONTROL LEVER, IDLE	STOP	
		+ Rated speed rpm : 1500
Rated speed rpm :	415	+ Del. quantity
Del. quantity		+ cm3/1000 strokes : 1.5
cm3/1000 strokes :	1.5	+ Tolerance
Tolerance		+ cm3/1000 str. + : 1.5
cm3/1000 str. +-:	1.5	+ Check tolerance
Check tolerance		+  cm3/1000s. + : 1.5
cm3/1000s. +-:	1.5	+ Shutoff solenoid
		+ Volt : 12

## PRESSURE DIFFERENCE

Rated speed rpm : 1500

Supply pomp

pressure bar : -1.0 Tolerance bar + : 0.2

Shutoff solenoid

Volt : 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm + : 0.2

Check

tolerance mm +: 0.6

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. + : 25.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

+-: 0,2

Dimension K mm : 3,3
Tolerance mm + : 0,1
Dimension KF mm : 5,8
Tolerance mm + : 0,2
Dimension MS mm : 1,4

Tolerance mm

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.12.96 Test oil : ISO 4113

Part no. : 0 460 484 135 Pump designation : VE4/8F2300R425-17

Customer—spec. information Customer : PSA

Motor : XUD9AY-L3 Cit.ZX

Power KW : 51.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

TALLECTION DUMP CETTING MALLIES

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.5
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar : 6.0 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 30.2 Tolerance

--7/4000 -

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt : 12

## IDLE DELIVERY

Rated speed rpm : 400

Del. quantity cm3/1000 strokes : 13.0

Tolerance

cm3/1000 str. + : 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

#### HIGH IDLE SETTING

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 9.5

Tolerance +	
cm3/1000 str. + : 1.0	
Shutoff solenoid +	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12 +	TIMING DEUTOF CHARACTERYOTTO
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
TOTAL COND OF CED INCOMENTATION	Rated speed rpm : 2000
Rated speed rpm : 2650	·
Del. quantity + cm3/1000 strokes : 11.0	SV travel mm : 7.6
cm3/1000 strokes : 11.0 +	Tolerance mm → : 0.4 Check
cm3/1000 str. +-: 2.0	tolerance mm +-: 0.7
Shutoff solenoid +	Shutoff solenoid
Volt : 12 +	Volt : 12
1	Rated speed rpm : 800
SET GRADUATED STARTING DELIVERY	Nated Speed (pill : 000
CONTROL LEVER, IDLE STOP	SV travel mm : 0.8
+	Tolerance mm +-: 0.4
Rated speed rpm : 100 + Del. quantity +	Check tolerance mm +-: 0.7
cm3/1000 strokes : 47.0	Shutoff solenoid
Tolerance +	Volt : 12
cm3/1000 str. +: 1.0 +	
Shutoff solenoid + Volt : 12 +	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12 +	Rated speed rpm : 2200
<del> </del>	Supply pomp
LOAD-DEPENDENT START OF DELIVERY	pressure bar : 8.5
SETTING	Tolerance bar +-: 0.3
DELIVERY DIFFERENCE	Shutoff solenoid Volt : 12
-	
Rated speed rpm : 1250 +	Rated speed rpm : 500
Del. quantity	Supply pomp
cm3/1000 strokes : -6.0 +	pressure bar : 3.6 Tolerance bar + : 0.3
cm3/1000 str. +: 1.0 +	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12 +	OVEREI OU OUANITITY
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
	Rated speed rpm : 2200
Rated speed rpm : 1250	Overflow quantity
Del. quantity + cm3/1000 strokes : -0.2 +	ccm/10s : 97.2 Tolerance
Tolerance	ccm/10s + : 41.6
cm3/1000 str. +-: 0.1	
Shutoff solenoid +	Check tolerance
Volt : 12	ccm/10s + : 55.5 Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	Volt : 12
+	
Rated speed rpm : 1250	Rated speed rpm : 500
Del. quantity + cm3/1000 strokes : -1.0 +	Overflow quantity ccm/10s : 63.8
Tolerance +	Tolerance : 63.6
cm3/1000 str. +-: 0.1	ccm/10s +-: 22.2
Shutoff solenoid +	
Volt : 12 +	

		l Not minutate.
Check tolerance		+ Del. quantity + cm3/1000 strokes : 30.2
ccm/10s +	34.7	+ Tolerance
Shutoff solenoid	• • • • • • • • • • • • • • • • • • • •	+ cm3/1000 str. $+$ : 0.5
Volt	: 12	+ Check tolerance
		+  cm3/1000s. + : 2.2
DELIVERY AND BREA	KAWAY CHARACTERISTIC	Shutoff solenoid
		† Volt : 12
Rated speed rpm	: 2650	+
Del. quantity	44.5	
cm3/1000 strokes	: 11.0	+ MECHANICAL SHUTOFF
Tolerance	. 20	Total aread man . 2000
cm3/1000 str. +-	2.0	+ Rated speed rpm : 2200
Check tolerance cm3/1000s. +-	4.0	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid	4.0	+ Tolerance
Volt	: 12	+ cm3/1000 str. +-: 1.5
VOLL	. 16	+ Check tolerance
Rated speed rpm	; 2500	- cm3/1000s. +-: 1.5
Del. quantity	. 2300	Shutoff solenoid
cm3/1000 strokes	: 22.5	+ Volt : 12
Tolerance		1
cm3/1000 str. +-	: 3.0	<u> </u>
Check tolerance		↓ ELECTR. SHUTOFF
cm3/1000s. +-	: 5.0	+ CONTROL LEVER, IDLE STOP
Shutoff solenoid	•	+
Volt	: 12	+ Rated speed rpm : 400
		<pre>Del. quantity</pre>
Rated speed rpm	: 2900	+ cm3/1000 strokes : 1.5
Del. quantity		+ Tolerance
cm3/1000 strokes	: 1.5	+ cm3/1000 str. +-: 1.5
Tolerance	A 94	+ Check tolerance
cm3/1000 str. +-	: 1.5	+ cm3/1000s. +-: 1.5
Check tolerance	. 4.5	†
cm3/1000s. +	: 1.5	†
Shutoff solenoid	: 12	Ī
Volt	: 16	I
Rated speed rpm	: 2200	I
Del. quantity	. LLOU	
cm3/1000 strokes	: 33.0	CHECKING LOAD-DEPENDENT
Tolerance	, 55.5	START OF DELIVERY
cm3/1000 str. +	: 1.0	+
Check tolerance		→ DELIVERY DIFFERENCE
cm3/1000s. +-	: 2.2	+
Shutoff solenoid		+ Rated speed rpm : 1250
Volt	: 12	+ Del. quantity
		+ cm3/1000 strokes : -7.0
Rated speed rpm	: 500	+ Tolerance
Del. quantity		+ cm3/1000 str. +-: 3.0
cm3/1000 strokes	: 31.3	+ Check tolerance
Tolerance		+  cm3/1000s. + : 3.0
cm3/1000 str. +	: 1.5	+ Shutoff solenoid
Check tolerance	7.0	† Volt : 12
cm3/1000s. +-		TIMING DELICE TRALES DEFENDANCE
Shutoff solenoid	4.0	† TIMING-DEVICE TRAVEL DIFFERENCE
Volt	: 12	T Poted speed pro 1250
Ontard award and	. 1250	Rated speed rpm : 1250
Rated speed rpm	: 1230	+ Del. quantity + cm3/1000 strokes : -1.0
		+ cmb/ loud strokes : -1.0

Tolerance	
cm3/1000 str. +-: Check tolerance	0.1
cm3/1000s. +-: Shutoff solenoid	0.1
Volt :	12
DELIVERY DIFFERENCE	
Rated speed rpm :	1250
Del. quantity cm3/1000 strokes :	5.0
Tolerance cm3/1000 str. +-: Check tolerance	3.0
cm3/1000s. +-:	3.0
Shutoff solenoid Valt :	12
PRESSURE DIFFERENCE	
Rated speed rpm :	1250
Supply pomp pressure bar :	-1.5
Tolerance bar + : Shutoff solenoid	0.3
Volt :	12
TIMING-DEVICE TRAVES	DIFFERENCE
Rated speed rpm :	1250
	1250 0.5
Rated speed rpm : Tolerance mm + : Check tolerance mm + :	1250
Rated speed rpm : Tolerance mm + : Check	1250 0.5
Rated speed rpm : Tolerance mm + : Check tolerance mm + : Shutoff solenoid	1250 0.5 0.6 12
Rated speed rpm : Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt :	1250 0.5 0.6 12
Rated speed rpm : Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt :  EXHAUST-GAS RECIRCUL	1250 0.5 0.6 12 ATION
Rated speed rpm : Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt :  EXHAUST-GAS RECIRCUL Rated speed rpm : Del. quantity	1250 0.5 0.6 12 ATION 1000
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	1250 0.5 0.6 12 ATION 1000 21.4 1.0
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	1250 0.5 0.6 12 ATION 1000 21.4 1.0 4.0
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:	1250 0.5 0.6 12 ATION 1000 21.4 1.0
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  START TRANSITION	1250 0.5 0.6 12 ATION 1000 21.4 1.0 4.0
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  START TRANSITION  Rated speed rpm: Del. quantity	1250 0.5 0.6 12 ATION 1000 21.4 1.0 4.0 12
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  START TRANSITION  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance	1250 0.5 0.6 12 ATION 1000 21.4 1.0 4.0 12
Rated speed rpm: Tolerance mm +: Check tolerance mm +: Shutoff solenoid Volt:  EXHAUST-GAS RECIRCUL Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  START TRANSITION Rated speed rpm: Del. quantity cm3/1000 strokes:	1250 0.5 0.6 12 ATION 1000 21.4 1.0 4.0 12

Rated speed rpm : 225
Del. quantity
cm3/1000 strokes : 54.0
Tolerance

cm3/1000 str. + : 17.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : 0,1
Dimension KF mm : 6,0
Tolerance mm + : 0,2
Dimension MS mm : 1,4
Tolerance mm + : 0,1

MICROSWITCH

SET

mm : 0,8 : ARF 12,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.08.96 : ISO 4113 Test oil

: 0 460 424 110 Part no. Pump designation : VE4/12F1350R621

Customer-spec. information : IVECO-FIAT Custaner : 8040.45.5200 Motor

Power KW 100.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm 0.55

0.35 Inlet press. ber . Tolerance bar + :

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

bar 250 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 1000

Aneroid pressure

hPa 1000

Setting wm Tolerance mm 0.1 Shutoff solenoid Volt 24

KSB/AFB Volt

#### SUPPLY PUMP PRESSURE

KSB/AFB Volt

1000 Rated speed rpm Aneroid pressure hPa 1000 Supply pomp pressure bar 6.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

24

24

24

70C Rated speed rpm Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 78.9 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.0 Shutoff solenoid Volt 24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500 Del. quantity cm3/1000 strokes : 50.5 Tolerance cm3/1000 str. + :0.5 Shutoff solenoid 24 Volt Check tolerance cm3/1000s.5.0

IDLE SETTING

KSB/AFB Volt

KSB/AFB Volt

Rated speed rpm	: 350	1
Del. quantity	. 330	KSB/AFB Volt : 24
cm3/1000 strokes	: 13.0	+ Setting point KSB
Tolerance	2.0	+ Rated speed rpm : 340
cm3/1000 str. +- Shutoff solenoid	: 2.0	+ Aneroid pressure + hPa : 1000
Volt	: 24	† 11F8 : 1000
Spread	-	$\frac{1}{2}$ SV travel mm : 3.0
cm3/1000 strokes	: 5.0	† Tolerance mm +-: 1.0
Check tolerance cm3/1000s.	: 5.0	+ Check + tolerance mm +-: 1.0
CMD7 (UUUS.	. 5.0	+ tolerance mm +-: 1.0 + Shutoff solenoid
KSB/AFB Volt	: 24	+ Volt : 24
		†
		+ Rated speed rpm : 450
		+ Aneroid pressure + hPa : 1000
FULL-LOAD SPEED R	EGULATION	<b>1</b> 11 <b>1</b> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		+ SV travel nm : 3.2
Rated speed rpm Pressure hPa	: 1500 : 1000	+ Tolerance mm +-: 0.5 + Check
Del. quantity	: 1000	tolerance mm + : 0.5
cm3/1000 strokes	: 44.0	+ Shutoff solenoid
Tolerance	2.2	† Volt : 24
cm3/1000 str. +- Shutoff solenoid	: 2.0	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt	: 24	T SOFFET FORF FRESSORE CHARACTERISTIC
		Rated speed rpm : 1100
KSB/AFB Volt	: 24	+ Anercid pressure
STARTING FUEL DEL	TVEDY	+ hPa : 1000 + Supply pomp
STARTING FOEL DEL	TACKI	pressure bar : 7.0
Rated speed rpm	: 100	Tolerance bar +-: 0.3
Del quantity	. 95.0	+ Shutoff solenoid
cm3/1000 strokes Tolerance	: 85.0	† Volt : 24
cm3/1000 str. +-	: 15.0	
Shutoff solenoid	•	†
Volt	: 24	Rated speed rpm : 600
KSB/AFB Volt	: 24	hPa : 1000
		+ Supply pomp
		pressure bar : 4.3
		<pre>- Tolerance bar + : 0.3 - Shutoff solenoid</pre>
		- + Volt : 24
INJECTION-PUMP TE	ST SPECIFICATIONS	+
TIMING DEVICE CHA	DACTEDISTIC	† KSB/AFB Volt : 24
ITHING DEATCE CHA	RACIERISTIC	Rated speed rpm : 450
Rated speed rpm	: 1100	+ Aneroid pressure
Aneroid pressure	. 4000	+ hPa : 1000
hPa	: 1000	+ Supply pomp + pressure bar : 7.3
SV travel mm	: 2.8	Tolerance bar +-: 0.5
Tolerance mm +-		+ Shutoff solenoid
Check		† Volt : 24
	. 07	
tolerance mm +- Shutoff solenoid	: 0.7	Rated speed rpm : 340
Shutoff solenoid Volt	: 0.7 : 24	Rated speed rpm : 340

Aneroid pressure		1	Talamana	
hPa	: 1000	Ť	Tolerance cm3/1000 str. +-:	5.0
	: 1000	Ť		5.0
Sribbly bomb	7.0	†	Check tolerance	. ~
pressure bar	: 7.0	+	cm3/1000s. +-:	6.5
Tolerance bar +-	: 0.5	+	Shutoff solenoid	
Shutoff solenoid		+	Volt :	24
Volt	; 24.	+		
		+	KSB/AFB Volt :	24
OVERFLOW QUANTITY		+		
		1	Rated speed rpm :	1600
Rated speed rpm	: 500	1	Aneroid pressure	
Overflow quantity		1	hPa :	1000
ccm/10s	: 55.5	$\mathbf{I}$	Del. quantity	1000
Tolerance	. 33.3	T	cm3/1000 strokes :	1.5
ccm/10s +-	: 16.6	T	Tolerance	1.5
CCM/10S	10.0	T		1.5
Objects the Learning		. †	cm3/1000 str. +-:	1.5
Check tolerance	A A M	†	Check tolerance	🗠
ccm/iOs +-	16.6	+	cm3/1000s. +-:	1.5
Shutoff solenoid	•	+	Shutoff solenoid	
Volt	: 24	+	Volt :	24
		+		
KSB/AFB Volt	: 24	+	KSB/AFB Volt :	24
		+		
Reted speed rpm	: 1350	1	Rated speed rpm :	600
Aneroid pressure		1	Aneroid pressure	
hPa	: 1000	1	hPa :	400
Overflow quantity		1	Del. quantity	400
ccm/10s	: 86.1	T	cm3/1000 strokes :	66.7
= ***	. 00.1	T		00.7
Tolerance	. 27.7	<b>T</b>	Tolerance	0.5
ccm/10s +-	27.7	+	cm3/1000 str. +-:	0.5
		†	Check tolerance	
Check tolerance		+	cm3/1000s. +-:	4.0
ccm/10s +	27.7	+	Shutoff solenoid	
Shutoff solenoid		+	Volt :	24
Volt	: 24	+		
		+	KSB/AFB Volt :	24
KSB/AFB Volt	: 24	+		
		1	Rated speed rpm :	1350
DELIVERY AND BREA	KAWAY CHARACTERISTIC	1	Aneroid pressure	
PERION NO DITE		1	hPa :	1000
Rated speed rpm	: 1500	7	Del. quantity	.000
Aneroid pressure	. 1300	1	cm3/1000 strokes :	77.5
hPa	: 1000	T	Tolerance	(,,)
	. 1000	Ţ	cm3/1000 str. +-:	2.0
Del. quantity	: 44.6	T		2.0
cm3/1000 strokes	: 44.6	†	Check tolerance	<b>~</b> -
Tolerance	. 20	†	cm3/1000s. +-:	3.5
cm3/1000 str. +	2.0	+	Shutoff solenoid	0.4
Check tolerance		t	Volt :	24
cm3/1000s. +-	6.0	+		
Shutoff solenoid		+	KSB/AFB Volt :	24
Volt	: 24	+		
		+	Rated speed rpm :	600
KSB/AFB Volt	: 24	+	Aneroid pressure	
		+	hPa :	1000
Rated speed rpm	: 1425	1	Del. quantity	
Aneroid pressure		1	cm3/1000 strokes :	81.4
hPa	: 1000	1	Tolerance	
Del. quantity		1	cm3/1000 str. +-:	2.0
cm3/1000 strokes	: 69.8	1	Check tolerance	2.3
とうしょうしゅう しんてい				
	. 07.0	1	cm3/1000s. +-:	3.5

Shutoff solenoid		+ Spread	
Volt	: 24	+ cm3/1000 strokes : 5.0	
		- Check tolerance	
KSB/AFB Volt	: 24	+ cm3/1000s. $+$ : 1.5	
	•	+ Spread	
Rated speed rpm	: 700	cm3/1000 strokes : 5.0	
	. 700	T dib/1000 strokes : 3.0	
Aneroid pressure	. 4000	TOLE OF VICTOR	
hipa	: 1000	† IDLE DELIVERY	
Del. quantity	70.0	†	
cm3/1000 strokes	: 78.9	+ Rated speed rpm : 425	
Tolerance		+ Del. quantity	
cm3/1000 str. +-	·: 0.5	+ cm3/1000 strokes : 1.5	
Check tolerance		+ Tolerance	
cm3/1000s. +-	3.5	+ cm3/1000 str. +-: 1.5	
Shutoff solenoid		+ Check tolerance	
Volt	: 24	+ cm3/1000s. +-: 1.5	
		+ Shutoff solenoid	
<del></del>			
MECHANICAL SHUTOF	F	1	
Rated speed rpm	: 1350	1,007,1110	
Aneroid pressure		1	
hPa	: 1000	1	
Del. quaratity	. 1000	1	
cm3/1000 strokes	: 1.5	I	
Tolerance	روا ،	I	
	. 15	T CTART TRANSTITAN	
cm3/1000 str. +-	: 1.5	+ START TRANSITION	
Spread		T Described to the control of the co	
cm3/1000 strokes	: 5.0	+ Rated speed rpm : 250	
Check tolerance		+ Del. quantity	
cm3/1000s. +-	·: 1.5	+ cm3/1000 strokes : 53.5	
Spread		+ Tolerance	
cm3/1000 strokes	: 5.0	+ cm3/1000 str. +-: 10.0	
Shutoff solenoid		+ Shutoff solenoid	
Volt	24	+ Volt : 24	
		+	
KSB/AFB Volt	: 24	+ KSB/AFB Volt : 24	
		+	
<del></del>		+	
ELECTR. SHUTOFF		+ Rated speed rpm : 130	
CONTROL LEVER, ID	LE STOP	+ Del. quantity	
	+	+ cm3/1000 strokes : 85.0	
Rated speed rpm	: 350	+ Tolerance	
Del. quantity	. 220	cm3/1000 str. +-: 15.0	
cm3/1000 strokes	: 1.5	Shutoff solenoid	
Tolerance	. 1.3	+ Volt : 24	
cm3/1000 str. ←	1.5	I volt : 24	
		T VCD/ACD Valt	
Check tolerance		+ KSB/AFB Volt : 24	
cm3/1000s. +-	: 1.5	†	
Spread		A SA PERENT NA A A A A A A A A A A A A A A A A A	~~~~
cm3/1000 strokes	: 5.0	+ ASSEMBLY AND ADJUSTMENT DIMENS	STONS
		† . <b>.</b>	
FULL-LOAD STOP CO	NTROL LEVER	+ Dimension K mm : 3,6	
		+ Tolerance mm +: 0,1	
Rated speed rpm	: 350	+ Dimension KF mm : 6,4	
Del. quantity		Tolerance mm +-: 0,2	
cm3/1000 strokes	: 1.5	+ MS1 dimension mm : 1,3	
Tolerance		+ Tolerance mm + : 0,2	
cm3/1000 str. +-	: 1.5	+	
		1	

CONTROL LEVER POSITION SET

Control lever position YA mm : 37,9..39,9

Control lever

position YB mm : 41,7..46,9

## BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 06.12.96 : ISO 4113 Test oil : 0 460 414 145 Part no. Pump designation: VE4/11F2000R686-2 Customer-spec. information Customer : FORD Motor : 2.5L DI Power KW 56.0 TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C Tolerance °C +-: Overflow restriction mm : 0.75 Inlet press. bar : 0.35 Tolerance bar +-: 0.05 Test nozzle holde : 1 688 901 114 assembly Opening pressure bar Tolerance bar ←: Test Lines : 1 680 750 073 Outside diameter : 6.00 x inside diameter : 2.00 450 x length mm :

Outlet	: B KDEP1151
INJECTION PUMP SE	ETTING VALUES
TIMING DEVICE TRA	4VEL
Rated speed rpm	: 1250
Setting mm Tolerance mm +-	: 3.2 -: 0.1
Shutoff solenoid Volt	: 12
SUPPLY PUMP PRESS	SURE
Rated speed rpm Supply pomp	: 1250
pressure bar	: 7.5
Tolerance bar +	-: 0.3
Shutoff solenoid Volt	: 12
FULL-LOAD DELIV.	WITHOUT BOOST PRESSURE
Rated speed rpm	: 1000
Rated speed rpm	
Del. quantity cm3/1000 strokes	
Del. quantity cm3/1000 strokes	: 30.6
Tolerance cm3/1000 str. +-	-: 0.5
Tolerance cm3/1000 str. +-	-: 0.2
Spread cm3/1000 strokes	: 3.0
Shutoff solenoid Volt Shutoff solenoid	: 12
Volt	: 12
Check tolerance cm3/1000s.	: 4.0
IDLE SETTING	
Rated speed rpm Del. quantity	: 425
cm3/1000 strokes	: 8.3
Tolerance cm3/1000 str. +- Shutoff solenoid	-: 1.0
Volt	: 12
Spread cm3/1000 strokes	: 3.0
Check tolerance cm3/1000s.	: 4.0

Plunger stroke mm : 0,35 Tolerance mm +-: 0.05

: B KDFP1151

Outlet

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

	+ Supply pomp + pressure bar : 5.8 + Tolerance bar + : 0.3 + Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
Rated speed rpm : 2200 Del. quantity	Rated speed rpm : 1000 Supply pomp
cm3/1000 strokes : 32.0 Tolerance	pressure bar : 6.9 Tolerance bar +: 0.3
cm3/1000 str. +: 1.0 Shutoff solenoid Volt: 12	+ Shutoff solenoid + Volt : 12
STARTING FUEL DELIVERY	OVERFLOW QUANTITY
Rated speed rpm : 100	Rated speed rpm : 500 Overflow quantity
Del. quantity cm3/1000 strokes : 52.5	+ ccm/10s : 119.4 + Tolerance
Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid	+ ccm/10s + : 22.2 + Check tolerance
Volt : 12	+ ccm/10s + : 22.2 + Shutoff solenoid
	+ Volt : 12
	Rated speed rpm : 1950 Overflow quantity
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s : 150.0 + Tolerance
TIMING DEVICE CHARACTERISTIC	+ ccm/10s + : 34.7
Rated speed rpm : 2000	Check tolerance + : 34.7
SV travel mm : 5.7 Tolerance mm + : 0.4 Check	+ Shutoff solenoid + Volt : 12
tolerance mm +-: 0.9 Shutoff solenoid	DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12	Rated speed rpm : 2200  Del. quantity
Rated speed rpm : 1000	cm3/1000 strokes : 32.0 Tolerance
SV travel mm : 2.1 Tolerance mm +-: 0.4 Check	- cm3/1000 str. + : 1.0 - Check tolerance - cm3/1000s. + : 5.0
tolerance mm + : 0.9 Shutoff solenoid	- Cm3/1000 str. + : 1.0 - Check tolerance + cm3/1000s. + : 5.0 - Shutoff solenoid + Volt : 12
Volt : 12	Rated speed rpm : 2150
SUPPLY PUMP PRESSURE CHARACTERISTIC	Del. quantity - cm3/1000 strokes : 34.9
Rated speed rpm : 2000 Supply pomp	Tolerance + cm3/1000 str. + : 3.0
pressure bar : 9.2 Tolerance bar + : 0.3	+ Check tolerance + cm3/1000s. +-: 6.0
Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12
Rated speed rpm : 500	Rated speed rpm : 2425

Del. quantity	†
cm3/1000 strokes : 2.5	+ FULL-LOAD STOP CONTROL LEVER
Tolerance	† S. J. J. S
cm3/1000 str. +: 2.5	Rated speed rpm : 425
Check tolerance cm3/1000s. + : 2.5	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid	T
Volt : 12	+ Tolerance + cm3/1000 str. +-: 1.5
volt : 12	
Amonoid maccure	+ Spread + cm3/1000 strokes : 5.0
Aneroid pressure hPa :	+ Check tolerance
iira .	+ cm3/1000s. +-: 1.5
LDA/	+ Spread
HBA stroke mm : 7.7	+ cm3/1000 strokes : 5.0
TION SCIONC HEID	1 CIII37 1000 301 0RC\$ . 3.0
Rated speed rpm : 1950	IDLE DELIVERY
Del. quantity	1000 0000000
cm3/1000 strokes : 40.5	+ Rated speed rpm : 500
Tolerance	+ Del. quantity
cm3/1000 str. + : 1.2	+ cm3/1000 strokes : 3.0
Check tolerance	Tolerance
cm3/1000s. +-: 2.5	+ cm3/1000 str. $+$ : 3.0
Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. $+-$ : 3.0
	+ Shutoff solenoid
Rated speed rpm : 1700	+ Volt : 12
Del. quantity	+
cm3/1000 strokes : 39.0	+
Tolerance	+
cm3/1000 str. + : 1.2	+
	· ·
Check tolerance	+
Check tolerance cm3/1000S. +-: 2.5	
Check tolerance cm3/1000S. +-: 2.5 Shutoff solenoid	EXHAUST-GAS RECIRCULATION
Check tolerance cm3/1000S. +-: 2.5	+
Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12	Rated speed rpm : 1250
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500	Rated speed rpm : 1250 Del. quantity
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 26.5
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 26.5 Tolerance
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. + : 0.5  Check tolerance
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 2.5
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 2.5
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. +-: 0.5  Check tolerance  cm3/1000s. +-: 2.5  Shutoff solenoid  Volt : 12
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 2.5  Shutoff solenoid  Volt : 12
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 2.5  Shutoff solenoid  Volt : 12
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid Volt : 12  Rated speed rpm : 300
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Check tolerance cm3/1000s. + : 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 50.6
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Check tolerance cm3/1000s. + : 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 2.5  Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4  Tolerance cm3/1000 str. + : 6.0  Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity

Volt

12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 7.7

: 2,8 - : 0,1 : 8,4 - : 0,2 Dimension K mm Tolerance mm

Dimension KF mm

Tolerance mm

Dimension MS mm : 1,8

Tolerance mm

MICPOSWITCH

SET

: ARF 20.0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 42,8..45,8

Control lever

position YB mm : 59,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.12.96 Test oil : ISO 4113

Part no. : 0 460 414 146 Pump designation : VE4/11F2000R686-3

Customer-spec. information Customer : FORD Motor : 2.5L DI

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 174

Opening pressure

bar : 207 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,35 Tolerance mm +-: 0,05

Outlet : B KDEP1151

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.2
Tolerance mm + : 0.1
Shutoff solenoid

Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 7.5
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1000 Rated speed rpm 500 Rated speed rpm Del. quantity cm3/1000 strokes : 35.7 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + :0.5 Tolerance cm3/1000 str. + : 0.2 Spread cm3/1000 strokes : 3.0 Shutoff solenoid 12 Volt Shutoff solenoid 12 Volt Check tolerance cm3/1000s.4.0

#### IDLE SETTING

425 Rated speed rpm Del. quantity 8.3 cm3/1000 strokes : Tolerance cm3/1000 str. + :1.0 Shutoff solenoid 12 Volt Spread 3.0 cm3/1000 strokes : Check tolerance cm3/1000s. 4.0

		L Su	nnly nomn		
			pply pomp essure bar	•	5.8
			lerance bar +	:	0.3
FULL-LOAD SPEED RI	EGULATION		utoff solenoid	•	- 10
		→ Vo	lt	:	12
Rated speed rpm	: 22 <b>0</b> 0	+			
Del. quantity			ted speed rpm	:	1000
cm3/1000 strokes	: 32.0		spia bomb		
Tolerance	4.5		essure bar	:	6.9
cm3/1000 str. +-	: 1.0		lerance bar +	:	0.3
Shutoff solenoid	: 12		utoff solenoid lt		12
Volt	• 12	† vo	ll	•	12
STARTING FUEL DEL	TVERY	I ov	ERFLOW QUANTITY		
SINKITHO I OCE NEC.	TACK!	I	CIVI FOM GOVISTILI		
Rated speed rpm	: 100	↓ Ra	ted speed rpm	:	500
Del. quantity			erflow quantity	Ť	
cm3/1000 strokes	: 52.5		m/10s	:	119.4
Tolerance			lerance		
cm3/1000 str. +-	: 20.0	+ cc	m/10s +-	:	22.2
Shutoff solenoid	• •	+ .			
Volt	: 12		eck tolerance		20.0
			m/10s +-	:	22.2
			utoff solenoid lt		12
		T vo	111	•	12
		I a	ited speed rpm	:	1950
INJECTION-PUMP TE	ST SPECIFICATIONS		erflow quantity	-	1730
21102012011 10111 121	0, 0, 202, 207, 2010		m/10s	:	150.0
TIMING DEVICE CHAP	RACTERISTIC		lerance		
		+ cc	m/10s +-	:	34.7
Rated speed rpm	: 2000	+			
			eck tolerance		
SV travel mm	5.7		m/10s +-	:	34.7
Tolerance mm +	: 0.4		utoff solenoid		40
Check	. 0.0	† vo	lt	:	12
tolerance mm +	: 0.9	Ť 15	THEON AND DOCAL	/ AL.IA'	Y CHARACTERISTIC
Shutoff solenoid	: 12	† DE	TIVEK! AND DREAM	KAWA	I CHARACIERISIIC
Volt	. 12	I Pa	ted speed rpm	•	2200
Rated speed rpm	: 1000		el. quantity	•	2200
nacea speed (piii	. 1000		3/1000 strokes	:	32.0
SV travel mm	: 2.1		lerance	•	<b>52.15</b>
Tolerance mm +	: 0.4	<u> </u>	3/1000 str. +-	:	1.0
Check			eck tolerance		
tolerance mm +	: 0.9		3/1000s. +-	:	5.0
Shutoff solenoid	40		utoff solenoid		40
Volt	: 12	+ vo	lt	:	12
CUIDDLY CUMB DOCCC	IDE CHADACTERISTIC	† 5-			2450
SUPPLY PUMP PRESSI	URE CHARACTERISTIC		ted speed rpm	:	2150
Rated speed rpm	: 2000		3/1000 strokes	•	34.9
Supply pomp	. 2000		lerance	•	<b>⊍</b> ⊤• /
pressure bar	: 9.2		3/1000 str. +	:	3.0
Tolerance bar +		T T	eck tolerance	-	- • •
Shutoff solenoid			3/1000s. +	:	6.0
Volt	: 12		utoff solenoid		
		+ Vo	lt	:	12
Rated speed rpm	: 500	+			2125
		+ Ra	ted speed rpm	:	2425

Del. quantity	+
cm3/1000 strokes : 2.5	+ FULL-LOAD STOP CONTROL LEVER
Tolerance	+
cm3/1000 str. + : 2.5	+ Rated speed rpm : 425
Check tolerance	+ Del. quantity
cm3/1000s. +-: 2.5	+ cm3/1000 strokes : 1.5
Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. +-: 1.5
vott : 12	
August 2.4 mm	+ Spread
Aneroid pressure	+ cm3/1000 strokes : 5.0
hPa :	† Check tolerance
	+ cm3/1000s. $+$ : 1.5
LDA/	+ Spread
HBA stroke mm : 7.7	+ cm3/1000 strokes : 5.0
· · · · · · · · · · · · · · · · · · ·	1
Rated speed rpm : 1950	IDLE DELIVERY
Del. quantity	TOUC DECIMACIÓN
cm3/1000 strokes : 40.5	Rated speed rpm : 500
Tolerance	+ Del. quantity
cm3/1000 str. +-: 1.2	+ cm3/1000 strokes : 3.0
Check tolerance	+ Tolerance
cm3/1000s. +-: 2.5	+ cm3/1000 str. +-: 3.0
Shutoff solenoid	+ Check tolerance
Volt : 12	+  cm3/1000s. + : 3.0
1 12	+ Shutoff solenoid
Rated speed rpm : 1700	+ Volt : 12
Del. quantity	7 1000
	Ţ
cm3/1000 strokes : 39.0	†
Tolerance	†
cm3/1000 str. + : 1.2	-la
	T
Check tolerance	<del>-</del>
Check tolerance	
Check tolerance cm3/1000s. + ; 2.5	EXHAUST-GAS RECTROULATION
Check tolerance cm3/1000s. +- ; 2.5 Shutoff solenoid	EXHAUST-GAS RECIRCULATION
Check tolerance cm3/1000s. + ; 2.5	+
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500	+ Rated speed rpm : 1250 + Del. quantity
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 26.5
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 26.5 Tolerance
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. +-: 0.5  Check tolerance
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. +-: 0.5  Check tolerance
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 26.5  Tolerance  cm3/1000 str. +-: 0.5  Check tolerance  cm3/1000s. +-: 2.5  Shutoff solenoid  Volt : 12
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid
Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. + : 0.2 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 300
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Check tolerance cm3/1000s. +: 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 50.6
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Check tolerance cm3/1000s. +: 1.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 50.6 Tolerance
Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 30.6 Tolerance cm3/1000 str. +: 0.2 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 26.5  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 480 Del. quantity cm3/1000 strokes : 30.4 Tolerance cm3/1000 str. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 50.6

Volt

12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm

7.7

Dimension K mm

: 2,8

Tolerance mm + Dimension KF mm : 8,4

-: 0,1

Tolerance mm + : 0,2

Dimension MS mm : 1,8

Tolerance mm

## **MICROSWITCH**

SET

: ARF 20,0

## CONTROL LEVER POSITION

SET

Control lever

position YA mm

: 42,8..45,8

Control lever

position YB mm

: 59,5..71.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.12.96 Test oil : ISO 4113

Part no. : 0 460 426 265 Pump designation : VE6/12F1150R730

Customer-spec. information Customer : NH Motor : EPO40B Power KW : 117.0

#### TEST BENCH REQUIREMENTS

Calibrating—Gil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar + : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Outlet : B

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 800 Aneroid pressure hPa : 1500

Setting mm : 2.1
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Aneroid pressure
hPa : 1500
Supply pomp
pressure bar : 6.2
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

800 Rated speed rpm : Aneroid pressure hPa 1500 Del. quantity cm3/i000 strokes : 100.5 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 5.0 Shutoff solenoid 12 Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

5.0

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 80.5
Tolerance
cm3/1000 str. + : 0.5
Shutoff solenoid
Volt : 12

Check tolerance cm3/1000s.

IDLE SETTING

Rated speed rpm : 375

F02

Del. quantity		+ Check
cm3/1000 strokes	: 16.0	tolerance mm +-: 0.7
Tolerance		+ Shutoff solenoid
cm3/1000 str. +-	2.0	+ Volt : 12
Shutoff solenoid		1
Volt	: 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
	. 12	T SUFFET FUMF PRESSURE CHARACTERISTIC
Spread		1000
cm3/1000 strokes	: 5.0	+ Rated speed rpm : 1000
Check tolerance		+ Aneroid pressure
cm3/1000s.	: 5.0	+ hPa : 1500
		+ Supply pomp
		+ pressure bar : 7.2
		+ Tolerance bar +-: 0.3
		Shutoff solenoid
FULL-LOAD SPEED R	EGULATION	+ Volt : 12
Rated speed rpm	: 1250	+ Rated speed rpm : 600
Pressure hPa	: 1500	+ Aneroid pressure
	. 1500	+ hPa : 1500
Del. quantity		
cm3/1000 strokes	: 49.0	+ Supply pomp
Tolerance		pressure bar : 5.2
cm3/1000 str. +-	2.0	+ Tolerance bar +-: 0.3
Shutoff solenoid		+ Shutoff solenoid
Volt	: 12	+ Volt : 12
		+
STARTING FUEL DEL	IVERY	+ OVERFLOW QUANTITY
		+
Rated speed rpm	: 100	+ Rated speed rpm : 1150
Del. quantity		+ Aneroid pressure
cm3/1000 strokes	: 110.0	+ hPa : 1500
Tolerance	. 110.0	Overflow quantity
cm3/1000 str. +-	30.0	+ ccm/10s : 130.5
	.: 20.0	
Shutoff solenoid	40	+ Tolerance
Volt	: 12	+ ccm/10s +-: 27.7
		†
		+ Check tolerance
		+ ccm/10s +-: 27.7
		+ Shutoff solenoid
***************************************		+ Volt : 12
INJECTION-PUMP TE	ST SPECIFICATIONS	+
		+ Rated speed rpm : 500
TIMING DEVICE CHA	RACTERISTIC	- Aneroid pressure
		+ hPa : 1500
Rated speed rpm	: 1000	+ Overflow quantity
Aneroid pressure	. 1555	+ ccm/10s : 97.2
hPa	: 1500	Tolerance . 77.2
ıra	. 1000	+ ccm/10s +-: 16.6
Cil daniel	. 77	T COM/ 105 T=: 10.0
SV travel mm	: 3.3	T Charle to Language
Tolerance mm +-	.: 0.4	+ Check tolerance
Check	6.3	+ ccm/10s + : 16.6
tolerance mm +	·: 0.7	+ Shutoff solenoid
Shutoff solenoid		+ Volt : 12
Volt	: 12	+
		+ DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm	: 600	+
Aneroid pressure		+ Rated speed rpm : 1250
hPa	: 1500	Aneroid pressure
- (1)		+ hPa : 1500
SV travel mm	: 0.9	Del. quantity
Tolerance mm +-	0.4	- cm3/1000 strokes : 49.0
TOTELALICE IND	. 0.4	T (1110) 1000 SETURES . 47.0

Tolerance cm3/1000 str. +-:	2.0	+ Tolerance + cm3/1000 str. +-: 3.0
Check tolerance cm3/1000s. +-:	6.0	- Check tolerance - cm3/1000s. +-: 5.0
Shutoff solenoid Volt :	12	+ Shutoff solenoid + Volt : 12
Rated speed rpm :	1200	+ Rated speed rpm : 800
Aneroid pressure hPe :	1500	+ Aneroid pressure + hPa : 1500
Del. quantity cm3/1000 strokes :	83.0	+ Del. quantity + cm3/1000 strokes : 100.5
Tolerance cm3/1000 str. +-: Check tolerance	5.0	+ Tolerance + cm3/1000 str. +-: 0.5 + Check tolerance
cm3/1000s. + : Shutoff solenoid	8.0	+ cm3/1000s. + : 3.0 + Shutoff solenoid
Volt :	12	Volt : 12
Rated speed rpm : Aneroid pressure	1300	
hPa : Del. quantity	1500	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
cm3/1000 strokes : Tolerance	1.5	Rated speed rpm : 375
cm3/1000 str. +-: Check tolerance	1.5	+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000s. +-: Shutoff solenoid Volt :	1.5 12	+ Tolerance + cm3/1000 str. +-: 1.5 + Check tolerance
Rated speed rpm :	650	- cm3/1000s. + : 1.5 - Spread
Aneroid pressure	600	cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes :	101.0	FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. + :	0.5	+ Rated speed rpm : 375 + Del. quantity
Check tolerance cm3/1000s. +-:	4.0	cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt :	12	+ cm3/1000 str. +-: 1.5 + Spread
Rated speed rpm : Aneroid pressure	1150	+ cm3/1000 strokes : 5.0 + Check tolerance + cm3/1000S. +-: 1.5
hPa : Del. quantity	1500	Spread - cm3/1000 strokes : 5.0
cm3/1000 strokes : Tolerance	88.0	- IDLE DELIVERY
cm3/1000 str. +-: Check tolerance	1.5	Rated speed rpm : 450
cm3/1000s. +-: Shutoff solenoid	3.5	+ Del. quantity + cm3/1000 strokes : 1.5
Volt :	12	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm : Aneroid pressure	500 1500	+ Check tolerance + cm3/1000S. +-: 1.5 + Shutoff solenoid
hPa : Del. quantity cm3/1000 strokes :	120.0	Volt : 12
		·

# START TRANSITION

200 Rated speed rpm :

Del. quantity cm3/1000 strokes :

35.C

Tolerance

cm3/1000 str. +:

5.0

Shutoff solenoid

Volt

12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7

Tolerance mm +: 0,1

Dimension KF mm : KOT

Dimension MS mm : 1,3 Tolerance mm +: 0,2

# CONTROL LEVER POSITION

SET

Control lever

: 32,8..34,8 position YA mm

Control lever

position YB mm : 45,0..51,0

End of test-specification sheet

### BOSCH INJ. PUMP TEST SPECIFICATIONS

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.12.95 Test oil : ISO 4113

: 0 460 426 266 Part no. Pump designation: VE6/12F1100R730-1

Customer-spec. information : NH Customer : EP040B Motor Power KW 98.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

returra

temperature °C Tolerance °C +-:

Overflow

0.75 restriction mm :

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

bar Tolerance bar +-:

Test lines : 1 680 750 000

6.00 Outside diameter :

x inside diameter : 2.00 840 x length mm

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,0 Outlet

INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rom : 800 Aneroid pressure

1500 hPa

2.0 Setting mm Tolerance mm +-: 0.2 Shutoff solenoid

Volt 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 800 Aneroid pressure hPa 1500

Supply pomp

pressure bar Tolerance bar ←: 0.3

Shutoff solenoid 12 Volt

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 800 Aneroid pressure 1500 hPa Del. quantity

cm3/1000 strokes : 85.5 Tolerance

0.5 cm3/1000 str. + :Spread

5.0 cm3/1000 strokes :

Check tolerance cm3/1000s. 5.0

Shutoff solenoid 12 Volt

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

5.0

500 Rated speed rpm : Del. quantity

cm3/1000 strokes : 81.0

Tolerance

cm3/1000 str. + :0.5

Shutoff solenoid Volt

12 Check tolerance

cm3/1000s.

IDLE SETTING

375 Rated speed rpm :

<b></b>	l el
Del. quantity	+ Check
cm3/1000 strokes : 12.0	+ tolerance mm +-: 0.7
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 2.0	→ Volt : 12
Shutoff solenoid	1
Volt : 12	↓ SUPPLY PUMP PRESSURE CHARACTERISTIC
Spread	T CONTENT ON THE COURT CHARACTER STIC
cm3/1000 strokes : 5.0	Rated speed rpm : 1100
Check tolerance	
cm3/4000s. : 5.0	+ Aneroid pressure
CM3/10003. : 3.0	+ hPa : 1500
	+ Supply pomp
	+ pressure bar : 7.7
	† Tolerance bar + : 0.3
	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 12
	+
Rated speed rpm : 1180	Rated speed rpm : 600
Pressure hPa : 1500	+ Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 48.5	+ Supply pomp
Tolerance	pressure bar : 6.2
cm3/1000 str. + : 2.0	Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	†
STARTING FUEL DELIVERY	+ OVERFLOW QUANTITY
	+
Rated speed rpm : 100	+ Rated speed rpm : 1100
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 110.0	→ hPa : 1500
Tolerance	+ Overflow quantity
cm3/1000 str. + : 30.0	+ ccm/10s : 130.5
Shutoff solenoid	+ Tolerance
Volt : 12	+ ccm/10s + : 27.7
VO(1)	1
	+ Check tolerance
	+ ccm/10s +-: 27.7
	Shutoff solenoid
	+ Volt : 12
THE FORTON CHIMD TEST CORSTELLATIONS	7 VOLE : 12
INJECTION-PUMP TEST SPECIFICATIONS	T Dated annual annual 500
THE STATE OF THE STATE OF THE STATE OF THE	+ Rated speed rpm : 500
TIMING DEVICE CHARACTERISTIC	+ Aneroid pressure
	+ hPa : 1500
Rated speed rpm : 1000	+ Overflow quantity
Aneroid pressure	+ ccm/10s : 97.2
hPa : 1500	+ Tolerance
	+ ccm/10s +-: 16.5
SV travel mm : 3.8	+
Tolerance mm +: 0.4	+ Check tolerance
Check	+ ccm/10s +-: 16.6
tolerance mm + : 0.7	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 600	SEESTED THE SHEARING CHARACTERIZATION
Aneroid pressure	Rated speed rpm : 1180
	+ Aneroid pressure
hPa : 1500	
Oll Americal arm	
SV travel mm : 1.0	+ Del. quantity
Tolerance mm + : 0.4	+ cm3/1000 strokes : 48.5

cm3/1000 str. +:         2.0           check tolerance cm3/1000S. +:         5.0           shutoff solenoid volt         12           Volt solenoid volt         12           Rated speed rpm:         1500           Ameroid pressure h2e         1500           Bel. quantity cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           cm3/1000 strokes:         68.0           shutoff solenoid volt         12           Rated speed rpm:         3.0           shutoff solenoid volt         12           Rated speed rpm:         1500           bel. quantity cm3/1000 strokes:         1.5           cm3/1000 strokes:         1.5           colerance cm3/1000 strokes:         1.5           cm3/1000 strokes:         1.5           shutoff solenoid volt         12           Rated speed rpm:         650           Ameroid pressure         660           Aperoid pressure         660           Aper	Tolerance		+ Tole	erance		
ma3/1000S. ← : 6.0 Shutoff solenoid Volt : 12  Reted speed rpm : 1150 Aneroid pressure h²e : 1500 bel. quantity com3/1000 strokes : 68.0 Tolerance com3/1000 strokes : 68.0 Tolerance com3/1000 strokes : 68.0 Tolerance com3/1000 strokes : 68.0 Tolerance com3/1000 strokes : 68.0 Tolerance com3/1000 strokes : 8.0 Shutoff solenoid Volt : 12  Reted speed rpm : 1210 Aneroid pressure h²e : 1500 Bel. quantity com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Shutoff solenoid Volt : 12  Reted speed rpm : 1500 Bel. quantity com3/1000 strokes : 1.5 Shutoff solenoid Volt : 12  Reted speed rpm : 650 Aneroid pressure h²e : 600 Bel. quantity com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 91.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 77.0 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tolerance com3/1000 strokes : 1.5 Tole	cm3/1000 str. +-	: 2.0	+ cm3/	/1000 str. +:	3.0	
Volt	cm3/1000s. +-	: 6.0	+ c <b>m</b> 3/	/1000s. +-:	5.0	
Ameroid pressure h/Pa : 1500 bel. quantity cm3/1000 strokes : 68.0		: 12			12	
hPa		: 1150	Rate	ed speed rpm :	800	
cm3/1000 strokes       : 68.0         Tolerance       cm3/1000 str. +: 0.5         Check tolerance       cm3/1000 str. +: 0.5         cm3/10003.       +: 8.6       cm3/1000 str. +: 0.5         Shutoff solenoid Volt       : 12         Rated speed rpm       : 1210         Amercid pressure hPa       : 1500       ELECTR. SHUTOFF         Del. quantity       cm3/1000 strokes       : 1.5         Tolerance       cm3/1000 strokes       : 1.5         Check tolerance       cm3/1000 strokes       : 1.5         Check tolerance       cm3/1000 strokes       : 1.5         Shutoff solenoid Volt       : 12       cm3/1000 strokes       : 1.5         Rated speed rpm       : 650       spread       cm3/1000 strokes       : 5.0         Rated speed rpm       : 600       full_LOAD STOP CONTROL LEVER       cm3/1000 strokes       : 5.0         Rated speed rpm       : 600       full_LOAD STOP CONTROL LEVER       cm3/1000 strokes       : 5.0         Full_LOAD STOP CONTROL LEVER       cm3/1000 strokes       : 1.5       spread         Tolerance       cm3/1000 strokes       : 1.5       spread         Tolerance       cm3/1000 strokes       : 1.5       spread         Tolerance       c	h?s	: 1500	+ hPa	:	1506	
Cm3/1000 str. + : 5.0   Cm3/1000 str. + : 0.5   Check tolerance cm3/1000s. + : 8.0   Shutoff solenoid Volt : 12   Tolerance cm3/1000s. + : 3.0   Shutoff solenoid Volt : 12   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 5.0   Spread cm3/1000 strokes : 5.0   Spread cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 5.0   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 strokes : 1.5   Tolerance cm3/1000 st	cm3/1000 strokes	: 68.0	+ cm3/	/1000 strokes :	85.5	
Cm3/1000S.	cm3/1000 str. +-	: 5.0	+ cm3/	/1000 str. +-:	0.5	
Rated speed rpm	cm3/1000s. +-	: 8.0	+ cm3/	/1000s. +-:	3.0	
Ameroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +: 1.5  Shutoff solenoid Volt : 12  Rated speed rpm : 650  Del. quantity cm3/1000 strokes : 91.5  Rated speed rpm : 650  Del. quantity cm3/1000 strokes : 5.0  Del. quantity cm3/1000 strokes : 5.0  Aneroid pressure hPa : 600  Del. quantity cm3/1000 strokes : 91.5  Tolerance cm3/1000 strokes : 91.5  Tolerance cm3/1000 strokes : 1.5  Rated speed rpm : 375  Del. quantity cm3/1000 strokes : 5.0  Rated speed rpm : 375  Del. quantity cm3/1000 strokes : 5.0  Rated speed rpm : 375  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 5.0  Rated speed rpm : 1100  Ameroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 str		: 12			12	
hPa         : 1500         ELECTR. SHUTOFF           Del. quantity         CONTROL LEVER, IDLE STOP           m3/1000 strokes         : 1.5           Tolerance         Rated speed rpm : 375           cm3/1000 str. +: 1.5         Del. quantity           cm3/1000 str. +: 1.5         Tolerance           Shutoff solenoid         cm3/1000 str. +: 1.5           Volt         : 12         Check tolerance           cm3/1000 str. +: 1.5         Spread           Ameroid pressure         650         Spread           hPa         : 600         FULL-LOAD STOP CONTROL LEVER           cm3/1000 strokes:         91.5         Rated speed rpm: 375           Tolerance         Rated speed rpm: 375         Del. quantity           cm3/1000 str. +: 0.5         Del. quantity         Cm3/1000 strokes: 1.5           cm3/1000 str. +: 0.5         Tolerance         cm3/1000 strokes: 1.5           cm3/1000 str. +: 1.5         Spread         cm3/1000 strokes: 5.0           check tolerance         cm3/1000 strokes: 5.0         Check tolerance           cm3/1000 strokes: 77.0         Tolerance         Tolerance           cm3/1000 strokes: 77.0         Tolerance         Rated speed rpm: 450           cm3/1000 strokes: 3.5         Del. quantity		: 1210	<u> </u>			_
cm3/1000 strokes       1.5         Tolerance       m3/1000 strokes       1.5         cm3/1000 str.       1.5       bel. quantity         cm3/1000 strokes       1.5       Tolerance         cm3/1000 strokes       1.5       Tolerance         cm3/1000 str.       1.5       Check tolerance         cm3/1000 strokes       5.0       Aneroid pressure         hPa       600       FULL_LOAD STOP CONTROL LEVER         rated speed rpm       600       FULL_LOAD STOP CONTROL LEVER         rated speed rpm       375       Del. quantity         cm3/1000 strokes       91.5       Rated speed rpm       375         raj/1000 strokes       91.5       Rated speed rpm       375         raj/1000 strokes       91.5       Tolerance       raj/1000 strokes       1.5         raj/1000 strokes       1.5       Tolerance       raj/1000 strokes       5.0         raj/1000 strokes       1.5       Tolerance       raj/1000 strokes       5.0         raj/1000 strokes       77.0       Tolerance       raj/1000 strokes       5.0         raj/1000 strokes       7.0       Tolerance       raj/1000 strokes       5.0         raj/1000 strokes       7.0       Tolerance       raj	hPa	: 1500			STOP	
cm3/1000 str. +-:       1.5       Del. quantity         check tolerance       cm3/1000 strokes : 1.5         cm3/1000s. +-:       1.5       Tolerance         cm3/1000 str. +-:       1.5         Shutoff solenoid       cm3/1000 str. +-:       1.5         Rated speed rpm : 650       Spread         Aneroid pressure hPa : 600       FULL-LOAD STOP CONTROL LEVER         Del. quantity       FULL-LOAD STOP CONTROL LEVER         cm3/1000 strokes : 91.5       Rated speed rpm : 375         Tolerance       cm3/1000 strokes : 1.5         cm3/1000 str. +-:       0.5         Shutoff solenoid       cm3/1000 strokes : 1.5         Volt : 12       Spread         Rated speed rpm : 1100       cm3/1000 strokes : 5.0         Rated speed rpm : 1500       cm3/1000 strokes : 5.0         Del. quantity       cm3/1000 strokes : 5.0         cm3/1000 strokes : 77.0       Tolerance         cm3/1000 strokes : 1.5	cm3/1000 strokes	: 1.5	+			
Shutoff solenoid  Volt : 12		: 1.5			1.5	
Rated speed rpm : 650  Aneroid pressure hPa	Shutoff solenoid		+ cm3/	/1000 str. +-:	1.5	
Ameroid pressure hPa : 600  Del. quantity cm3/1000 strokes : 91.5  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 strokes : 1.5  Rated speed rpm : 375  Del. quantity cm3/1000 str. +: 1.5  Spread cm3/1000 strokes : 5.0  Rated speed rpm : 1100 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 5.0  Check tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 77.0  Tolerance cm3/1000 strokes : 77.0  Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 1.5  Shutoff solenoid  Volt : 12  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance			+ cm3/	/1000s. +-:	1.5	
Del. quantity cm3/1000 strokes : 91.5  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000 str. + : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1.5 Spread Check tolerance cm3/1000 strokes : 5.0 Rated speed rpm : 1100 Rated speed rpm : 1100 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 5.0  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes :	Aneroid pressure				5.0	
Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000 str (cm3/1000 str) (cm3/	Del. quantity		FULL	LOAD STOP CONT	ROL LEVER	
Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1100 Aneroid pressure hPa	Tolerance				375	
Shutoff solenoid Volt : 12	Check tolerance		+ c <b>m</b> 3/	/1000 strokes :	1.5	
Rated speed rpm : 1100	Shutoff solenoid		+ cm3/	/1000  str. + :	1.5	
Ameroid pressure  hPa : 1500			+ cm3/	/1000 strokes :	5.0	
Del. quantity cm3/1000 strokes : 77.0  Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 5.0  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12	Aneroid pressure		+ cm3/	/1000s. +-:	1.5	
Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Aneroid pressure hPa : 1500 Del. quantity    Tolerance cm3/1000 str. + : 1.5   Check tolerance cm3/1000s. + : 1.5   Shutoff solenoid cm3/1000s.	Del. quantity				5.0	
cm3/1000s.       +-:       3.5         Shutoff solenoid	Tolerance		IDLE	EDELIVERY		
Volt : 12		: 3.5	+ Del.	. quantity		
Rated speed rpm : 500 + Check tolerance Aneroid pressure + cm3/1000S. + : 1.5 hPa : 1500 + Shutoff solenoid Del. quantity + Volt : 12		: 12	+ Tole	erance		
hPa : 1500 + Shutoff solenoid Del. quantity + Volt : 12		: 500	+ Chec	ck tolerance		
	hPa	: 1500	+ Shut	toff solenoid		
		: 103.0	† Volt	;	12	

# START TRANSITION

Rated speed rpm : 200

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 str. + : 5.0

Shutoff solenoid

Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : 0,1
Dimension KF mm : KOT
Dimension MS mm : 1,4
Tolerance mm + : 0,2

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 40,7..47,3

End of test-specification sheet

BOSCH INJ. PUMP T	EST SPECIFICATIONS
Note remarks	
Refer to Service adjustment instru See microcard(s)	ctions.
Edition Test oil	: 19.12.96 : ISO 4113
Part no. Pump designation	: 0 460 426 264 : VE6/12F1100R729-2
Customer-spec. in Customer Motor Power KW	formation : NH : EPO40B-F125 : 96.0
TEST BENCH REQUIR	EMENTS
Calibrating-oil return temperature °C +-	: 45 : 1
Overflow restriction mm	: 0.75
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 110
Opening pressure bar Tolerance bar +-	: 250 : 3
Test lines	: 1 680 750 000
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 840
	<del></del>

<del></del>		
INJECTION PUMP SE	TTIN	G VALUES
TIMING DEVICE TRA	WEL	
Rated speed rpm	:	600
Setting mm	:	1.6
Tolerance mm +	-	0.2
Shutoff solenoid		40
Volt	:	12
SUPPLY PUMP PRESS	URE	
Rated speed rpm	:	600
Supply pomp pressure bar		5.5
Tolerance bar +	•	0.2
Shutoff solenoid	•	0.2
Volt	:	12
FULL-LOAD DELIV.	WITH	OUT BOOST PRESSU
Rated speed rpm	:	600
Rated speed rpm	:	800
Del. quantity		
cm3/1000 strokes	:	75.0
Del. quantity cm3/1000 strokes	•	80.0
Tolerance	•	00.0
cm3/1000 str. +	· :	0.5
Tolerance		
		• •
cm3/1000 str. +	- :	0.5
cm3/1000 str. +- Spread		
cm3/1000 str. +	:	0.5 5.0
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt	:	
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid	:	5.0 12
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt	:	5.0
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid	:	5.0 12
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING	:	5.0 12
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity	:	5.0 12 12 375
cm3/1000 str. +- Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity cm3/1000 strokes	:	5.0 12 12
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 strokes cm3/1000 strokes cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 str. + Spread cm3/1000 strokes cm3/1000 str. + Spread c	: : : : : : : : : : : : : : : : : : : :	5.0 12 12 375
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	5.0 12 12 375 15.0 0.5
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	5.0 12 12 375 15.0
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt Spread	: : : : : : : : : : : : : : : : : : : :	5.0 12 12 375 15.0 0.5
cm3/1000 str. + Spread cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt IDLE SETTING Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	5.0 12 12 375 15.0 0.5

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

FULL-LOAD SPEED RE	EGULATION	‡	Shutoff solenoid Volt	:	12
Rated speed rpm	: 1150	<u>†</u>	OVERFLOW QUANTITY		
Del. quantity cm3/1000 strokes		1	Rated speed rpm	•	1100
Tolerance cm3/1000 str. +-		1	Overflow quantity ccm/10s		130.5
Shutoff solenoid Volt	: 12	ł	Tolerance	•	27.7
STARTING FUEL DELI		1	Check tolerance	•	
Rated speed rpm	: 100	Ì	ccm/10s +- Shutoff solenoid	:	27.7
Del. quantity cm3/1000 strokes		<u> </u>	Volt	:	12
Tolerance cm3/1000 str. +-	•	†	Rated speed rpm Overflow quantity		475
Shutoff solenoid Volt	: 12	ł	ccm/10s Tolerance	:	108.3
7000	• 12	Ì		:	16.6
		+	Check tolerance ccm/10s +- Shutoff solenoid	:	16.6
INJECTION-PUMP TES	ST SPECIFICATIONS	1	Volt	:	12
TIMING DEVICE CHAR	RACTERISTIC	<u> </u>	DELIVERY AND BREAK	KAWA	Y CHARACTERISTIC
Rated speed rpm	: 750	1	Rated speed rpm Del. quantity	:	1150
SV travel mm Tolerance mm +	: 2.2 : 0.4	1	cm3/1000 strokes Tolerance	:	65.0
Check tolerance mm +-		†	cm3/1000 str. +- Check tolerance	:	0.5
Shutoff solenoid Volt	: 12	1	cm3/1000s. +- Shutoff solenoid	:	8.0
Rated speed rpm	: 475	1	Volt	:	12
SV travel mm	: 1.1	1	Rated speed rpm Del. quantity	:	1190
Tolerance mm +- Check	: 0.4	†	cm3/1000 strokes Tolerance	:	33.0
tolerance mm +- Shutoff solenoid	: 0.7	1	cm3/1000 str. +- Check tolerance	:	8.0
Volt	: 12	1	cm3/1000s. +- Shutoff solenoid	:	12.0
SUPPLY PUMP PRESSU	URE CHARACTERISTIC	<u> </u>	Volt	:	12
Rated speed rpm Supply pomp	: 1100	1	Rated speed rpm Del. quantity	:	1220
pressure bar Tolerance bar +-	: 7.8 : 0.3	<u> </u>	cm3/1000 strokes Tolerance	:	1.5
Shutoff solenoid Volt	: 12	1	cm3/1000 str. +- Check tolerance	:	1.5
Rated speed rpm	: 475	†	cm3/1000s. +- Shutoff solenoid	:	1.5
Supply pomp pressure bar		†	Volt	:	12
Tolerance bar +-	_	+	Rated speed rpm	:	1100

Dal mandali.	I Talanana
Del. quantity	+ Tolerance
cm3/1000 strokes : 71.0	├ cm3/1000 str. + : 1.5
Tolerance	Spread
cm3/1000 str. +-: 2.0	+ cm3/1000 strokes : 5.0
Check tolerance	+ Check tolerance
cm3/1000s. + : 3.5	+ cm3/1000s. $+-$ : 1.5
Shutoff salenaid	
Volt : 12	TOLE DELTHEON
volt : 12	- IDLE DELIVERY
Da. A. J. am. a. J. a	†
Rated speed rpm : 500	Rated speed rpm : 460
Del. quantity	+ Del. quantity
<b>cm3/1000</b> strokes : 67.0	+ cm3/1000 strokes : 1.5
Tolerance	† Tolerance
cm3/1000 str. + : 6.0	+ cm3/1000 str. +-: 1.5
Check tolerance	+ Check tolerance
cm3/1000s. +-: 6.0	+ cm3/1000s. +-: 1.5
Shutoff solenoid	Shutoff solenoid
Volt : 12	Volt : 12
, 12	1 1000
Rated speed rpm : 475	$\mathbf{I}$
Del. quantity	<b>T</b>
	<b>T</b>
cm3/1000 strokes : 68.5	<b>†</b>
Tolerance	†
cm3/1000 str. +: 3.0	†
Check tolerance	+ START TRANSITION
cm3/1000s. + : 5.0	+
Shutoff solenoid	+ Rated speed rpm : 440
Volt : 12	+ Del. quantity
	+ cm3/1000 strokes : 72.0
Rated speed rpm : 800	+ Tolerance
Del. quantity	- cm3/1000 str. +-: 10.0
	L Shutoff solenoid
cm3/1000 strokes : 80.0	+ Shutoff solenoid
cm3/1000 strokes : 80.0 Tolerance	+ Shutoff solenoid + Volt : 12
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +-: 0.5</pre>	
cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance	+ Volt : 12
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0</pre>	Volt : 12 Rated speed rpm : 250
cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid	Volt : 12 Rated speed rpm : 250 Del. quantity
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0</pre>	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid</pre>	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid</pre>	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 str. +-: 20.0
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid</pre>	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 str. +- : 20.0  Shutoff solenoid
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +- : 0.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid</pre>	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 str. +-: 20.0
cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 str. +- : 20.0  Shutoff solenoid
cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 str. +- : 20.0  Shutoff solenoid
cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Volt : 12  Rated speed rpm : 250  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 str. +- : 20.0  Shutoff solenoid
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375	Volt : 12  Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity	Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 130.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. + : 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +- : 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +- : 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +- : 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes: 5.0	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +-: 0,2
cm3/1000 strokes: 80.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +-: 0,2  CONTROL LEVER POSITION
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER</pre>	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +-: 0,2
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. + : 9.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375</pre>	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +-: 0,2  CONTROL LEVER POSITION
Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +- : 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +- : 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +- : 0,2  CONTROL LEVER POSITION SET
<pre>cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. + : 9.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375</pre>	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +-: 0,2  CONTROL LEVER POSITION
Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity	Rated speed rpm : 250  Del. quantity cm3/1000 strokes : 130.0  Tolerance cm3/1000 str. +-: 20.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: 0,1 Dimension KF mm : KOT Dimension MS mm : 1,4 Tolerance mm +-: 0,2  CONTROL LEVER POSITION SET

Control lever position YB mm	: 39,646,2

End of test-specification sheet

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA

Edition : 13,11.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/10F2100R675 Type number : 0 460 404 085

Customer Part-No. :

Customer—specific information Customer : IVECO-SOFIM

Engine : 8140.67.3700

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening |

Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery

Prestroke mm: 0.2

> (from BDC): +-0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 2.60...2.80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.50...6.10

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1500

Del. quantity cm3/

> 1000s.: 43.0...44.0

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 13.0...17.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 > 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2300

Del. quantity cm3/

> 1000s.: 30.0...34.0

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 50.0...100.0

mind> 1000s.: 60.0

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/

difference> 1000s.: - 9.0...11.0 \*

Shutoff

electromagnet>Volt: 12 SP press.-dif.measurement

1st speed 1/min: 1250

Supply pump

pressure>

difference bar: -0.1...0.3 \*

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

	+	Del. quantity cm3/:	30.034.0
Timing-device charac	cteristic: +	> 1000s.:	(26.038.0)
	+	4th speed 1/min:	2100
1st speed 1/min:		Shutoff	
	0.61.2	electromagnet>Volt:	
	(0.21.6)	Del. quantity cm3/:	43.046.0
electromagnet>Volt:		> 1000s.:	(42.047.0)
2nd speed 1/min:		5th speed 1/min:	1500
	2.62.8	Shutoff	
	(2.13.3)	electromagnet>Volt:	
Shutoff	+	Del. quantity cm3/:	
electromagnet>Volt:			(41.545.5)
3rd speed 1/min:		9th speed 1/min:	1000
TD travel mm:	7.17.7	Shutoff	
	(6.78.1)	electromagnet>Volt:	
Shutoff	. +	Del. quantity cm3/:	39.542.5
electromagnet>Volt:	12 +		(38.543.5)
_	+	10th speed 1/min:	600
Supply-pump pressure	e characteristic:	Shutoff	
	+	electromagnet>Volt:	
1st speed 1/min:	600 +	Del. quantity cm3/:	
Supply-pump	+	> 1000s.:	(33.539.5)
•	3.03.6		
Shutoff	- <u>-</u>		
electromagnet>Volt:	12 +		
2nd speed 1/min:	1250 +	Electr. shutoff:	
Supply-pump .	+		
	5.56.1	1st speed 1/min:	
Shutoff	+	Del. quantity cm3/:	
electromagnet>Volt:		> 1000s.:	-
3rd speed 1/min:	2000 +	Shutoff	
Supply-pump		electromagnet>volt:	-
	7.98.5		
Shutoff		Idle delivery:	
electromagnet>Volt:	12 +	A	27F
A	T	1st speed 1/min:	3/5
Overflow quantity at	covertion valve +	Shutoff	40
4-4-1	(m) T	electromagnet>Volt:	
1st speed 1/min:	· T	Del. quantity cm3/:	13.017.0
Shutoff	13		(10.020.0)
electromagnet>Volt:		Dispersion cm3/:	
	41.7083.40	> 1000s.:	
quantity> cm3/10s: 2nd speed 1/min:		2nd speed 1/min: Shutoff	400
2nd speed 1/min: Shutoff	Z100 T	electromagnet>Volt:	12
	12 I		
electromagnet>Volt:	55.60139.00	Del. quantity cm3/: > 1000s.:	(0.003.00)
Overflow : quantity> cm3/10s:			
quantity> cm3/10s:	(40.60154.60)	3rd speed 1/min: Shutoff	323
Dal framework and	hankayay ahan :	electromagnet>Volt:	12
Delivery-quant. and	Dreakaway Char	Del. quantity cm3/:	
	7		(21.033.0)
2nd speed 1/min:	2600	/ 10005.1	(61.033.0)
	7	Load-dependent stom	t of delivery
Shutoff	12	Load-dependent stam	
electromagnet Volt:		Injqty.dif.measur	cinci i C •
Del. quantity cm3/: > 1000s.:	(0.003.00)	1st speed 1/min:	1250
		Injqty. cm3/	
3rd speed 1/min: Shutoff	7	difference 1000s.:	
electromagnet>Volt:	12 I	Shutoff	-
CLCLI UMBUSEL/YOLL:	·-		

electromagnet>Volt: 12 2nd speed 1/min: 1250 cm3/: 4.0...6.0 ' Z Inj.-qty. difference> 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: 1/min: 1250 1st speed : -0.2..0.4 " TD-travel difference> mm: -Shutoff electromagnet>Volt: 12 2nd speed 1/min: 1250 : 0.0...0.4 'Z TD-travel difference> mm: -Shutoff electromagnet>Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 25.0...45.0 1000s.: -1/min: 300 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 47.0...67.0 1000s.: -1/min: 100 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 60.0...100.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mn: -KF mm: 5.6...6.0 mm: 1.7...1.9 MS mm: 37.9...39.9 Ya mm: 42.9...48.1 Yb Remarks:

Ya = Distance between VE flange and

speed-control lever in idle

position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Z = Absolute delivery

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SOF Edition : 24.10.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R535-1

Type number : 0 460 414 129

Customer Part-No. :

Customer—specific information Customer : IVECO—SOFIM

Engine : 8140,47,2210

Power KW: 83.0

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 90% 027

Opening |

Pressure> bar: 247.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1400 Charge press. hPa: 1000 Setting value mm: 3.20...3.40

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1400 Charge press hPa: 1000

Setting value bar: 6.80...7.40

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1750 Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 61.50...62.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 > 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 25.50...26.50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 325

Del. quantity cm3/

> 1000s.: 8.00...12.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 > 10008.: (6.5)

Full-load speed regulation

Speed 1/min: 2175 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 24.00...30.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.00...90.00

mind> 1000s.: 40.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

+	- 3rd speed 1/min: 1900
Speed 1/min: 1400	- Charge press. hPa: 1000
Charge press hPa: -	- Supply-pump
Injqty. cm3/	- pressure> bar: 8.509.10
difference> 1000s.: -15.517.5 *	- Shutoff
Shutoff	- electromagnet>Volt: 12
mlectromagnet>Volt: 12	etetti diiagi ietzvott. 12
SP pressdif.measurement	- Overflow guartity at everflow velve
or pressuii.measurement	<ul> <li>Overflow quantity at overflow valve</li> </ul>
1at amond 1/min. 1/00	- - 1st speed
1st speed 1/min: 1400	
Charge press hPa: -	- Charge press. hPa: 1000
Supply pump	- Shutoff
pressure>	- electromagnet>Volt: 12
difference> bar: -0.10.3 *	- Overflow : 41.7083.40
Shutoff	- quantity> cm3/10s: (26.7098.40)
electromagnet Volt: 12	- 2nd speed 1/min: 1900
<del>- 1</del>	- Charge press. hPa: 1000
Inspection-pump test specifications	Shutoff
Test specifications in parentheses	electromagnet>Volt: 12
· · · · · · · · · · · · · · · · · · ·	- Overflow : 55.60139.00
Timing-device characteristic:	- quantity> cm3/10s: (40.60154.00)
1st speed 1/min: 1250	- Delivery-quant. and breakaway char.:
Charge press hPa: 1000	-
TD travel mm: 2.002.60	•
> mm: (1.603.00)	- 1st speed 1/min: 800
electromagnet>Volt: 12	Charge-air pressure-setting
2nd speed 1/min: 1400	• • • • • • • • • • • • • • • • • • • •
Charge press hPa: 1000	- LDA-stroke mm: 6.4
TD travel mm: 3.203.40	Shutoff
> mm: (2.604.00)	electromagnet>Volt: 12
Shutoff	- Del. quantity cm3/: 48.5049.50
electromagnet>Volt: 12	- > 1000s.: (45.5052.50)
3rd speed 1/min: 1600	2nd speed 1/min: 2325
Charge press hPa: 1000	- Charge press. hPa: 1000
TD travel mm: 4.204.80	- Shutoff
> mm: (3.805.20)	- electromagnet Volt: 12
Shutoff	- Del. quantity cm3/: 0.003.00
electromagnet>Volt: 12	- > 1000s.: (0.003.00)
4th speed 1/min: 1900	- 3rd speed 1/min: 2175
Charge press hPa: 1000	- Charge press. hPa: 1000
TD travel mm: 4.605.20	- Shutoff
> mm: (4.205.60)	electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 24.030.0
electromagnet>Volt: 12	> 1000s.: (22.531.5)
etectionagnet vott. 12	4th speed 1/min: 2100
Sumply—numm processing characteristics	- Charge press. hPa: 1000
Supply-pump pressure characteristic:	- Charge press. Hra. 1000 - Shutoff
4-4 annual 4/min 900	* *· · · · · ·
1st speed 1/min: 800	electromagnet>Volt: 12
Charge press. hPa: 1000	Del. quantity cm3/: 37.045.0
Supply-pump	- > 1000s.: (35.047.0)
pressure> bar: 4.605.20	- 5th speed 1/min: 1900
Shutoff	- Charge press. hPa: 1000
electromagnet>Volt: 12	- Shutoff
2nd speed 1/min: 1400	- electromagnet>Volt: 12
Charge press. hPa: 1000	- Del. quantity cm3/: 59.5064.50
Supply-pump +	- > 1000s.: (58.5065.50)
pressure> bar: 6.807.40	- 6th speed 1/min: 1750
Shutoff	- Charge press. hPa: 1000
electromagnet>Volt: 12	- Shutoff

electromagnet>Volt: 12	+ difference> 1000s.: -
Del. quantity cm3/: 61.562.5	↓ Shutoff
> 1000s.: (58.565.5)	
/ (0005,: (30,3,63,3)	+ electromagnet Volt: 12
7th speed 1/min: 1250	+
Charge press. hPa: 1200	+ TD-travel dif.measurement:
	ib clavet all imediatement.
Shutoff	<b>†</b>
electromagnet>Volt: 12	+ 1st speed 1/min: 1400
Del. quantity cm3/: 56.561.5	+ Charge press. hPa: -
10000 . (FF 0 . (7 0)	
> 1000s.: (55.063.0)	† TD-travel : -0.81.0 "
8th speed 1/min: 550	+ difference> mm: -
Charge press. hPa: -	+ Shutoff
Shytoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+ 2nd speed 1/min: 1400
Del. quantity cm3/: 25.5026.50	+ Charge press. hPa: -
	The American A. O. O. O. O. O. O. O. O. O. O. O. O. O.
> 1000s.: (22.5029.50)	† TD-travel : -1.01.8 '
9th speed 1/min: 800	→ Shutoff
Charge press. hPa: 1000	+ electromagnet>Volt: 12.0
	T ecectionagnet voct. 12.0
Shutoff	t
electromagnet>Volt: 12	Part-load del.at 3rd injqty.
Del. quantity cm3/: 55.064.0	1
	T (500)
> 1000s.: (54.065.0)	+ stop (EGR set)
	<del> </del>
	Τ
	+ Spacing mm: 12.0
Electr. shutoff:	+
	1st speed 1/min: 1200
A	
1st speed 1/min: 325	+ Charge press. hPa: -
Charge press. hPa: -	+ Shutoff
Del. quantity cm3/: 0.003.00	+ electromagnet>Volt: 12
> 1000s.: (0.003.00)	+ Del. quantity cm3/: 17.019.0
Shutoff	+ > 1000s.: (15.520.5)
origio i	1000011 (101011)
	1
electromagnet>volt: -	+
electromagnet>volt: -	+ Automatic starting fuel delivery:
-	Automatic starting fuel delivery:
electromagnet>volt: -  Idle delivery:	+
Idle delivery:	+ 1st speed 1/min: 200
-	+
Idle delivery: 1st speed 1/min: 325	1st speed 1/min: 200 Shutoff
Idle delivery:  1st speed  1/min: 325 Shutoff	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12
Idle delivery:  1st speed   1/min: 325 Shutoff electromagnet>Volt: 12	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0
Idle delivery:  1st speed   1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12
Idle delivery:  1st speed   1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0
Idle delivery:  1st speed  1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000S.: (6.0014.00)	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -
Idle delivery:  1st speed  1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 >	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5)	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: -
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5)	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: -
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Dei. quantity cm3/: 14.030.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Dei. quantity cm3/: 14.030.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Dei. quantity cm3/: 14.030.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: - Load-dependent start of delivery:	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet:
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet: Cut-in
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: -	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Dei. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0"	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0"	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Dei. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/ : -16.022.0" difference> 1000s.: (-15.023.0) "	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/ : -16.022.0" difference> 1000s.: (-15.023.0) " Shutoff	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0" difference> 1000s.: (-15.023.0) " Shutoff electromagnet>Volt: 12	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K mm: K1
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0" difference> 1000s.: (-15.023.0) " Shutoff electromagnet>Volt: 12	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K mm: K1
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0" difference> 1000s.: (-15.023.0) " Shutoff electromagnet>Volt: 12 2nd speed 1/min: 1400	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K mm: K1 KF mm: K0T
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0" difference> 1000s.: (-15.023.0) " Shutoff electromagnet>Volt: 12 2nd speed 1/min: 1400 Charge press. hPa: -	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000S.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000S.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K mm: K1 KF mm: K0T MS1 mm: 1.41.7
Idle delivery:  1st speed 1/min: 325 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0012.00 > 1000s.: (6.0014.00) Dispersion cm3/: 6.0 > 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.003.00 > 1000s.: -  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -16.022.0" difference> 1000s.: (-15.023.0) " Shutoff electromagnet>Volt: 12 2nd speed 1/min: 1400	1st speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0105.0 > 1000s.: -  2nd speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet>Volt: 12.0 Del. quantity cm3/: 14.030.0 > 1000s.: -  Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K mm: K1 KF mm: K0T

Ya mm: 33.0...35.0 Yb mm: 46.4...52.4

# Potentiometer adjustment:

Angle for pot. > °: 25
Supply voltage pot. > volt: 5.0
Output volt

pot. > volt: 3.3

Remerks:

a = Distance hetwo

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Z = Absolute delivery

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAX

Edition : 14.10.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R653-1

Type number : 0 460 414 160

Sustamer Fart-No. :

Customer-specific information

Customer : MAXION

Engine : HS 4

Power KW: 70.0

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil

return>temp. > °C

with>thermometer> : 54.00 ... 56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 116

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0.5

Test ini. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

x Length> mm: 450

Start of delivery

Prestroke mm: -

> (from BDC): -

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500

Charge press. hPa: 1200

Setting value mm: 2.10...2.30

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500

Charge press hPa: 1200 Setting value bar: 6.50...749

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1150 Charge press. hPa: 1200

Del. quantity cm3/

> 1000s.: 68.00...69.00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (4.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 48.00...49.00

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

> 1000s.: 12.00...16.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 4.0 > 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 2150 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 44.00...48.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 44.00...94.00

mind> 1000s.: 44.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device charac	cteristic:	quantity> cm3/10s:	(40.60154.00)
1st speed 1/min:		Delivery-quant. and	breakaway char.:
Charge press hPa:	· · · · · · · · · · · · · · · · · · ·		
TD travel mm:	2.102.30		
	(1.702.70)	1st speed 1/min:	700
electromagnet>Volt:		Charge-air pressure	
2nd speed 1/min:		point> hPa:	
Charge press hPa:		LDA-stroke mm:	
TD travel mm:	4.705.30	Shutoff	<b>0</b> /0
> mm:	(4.405.60)	electromagnet>Volt:	12
Shutoff	1	Del. quantity cm3/:	
electromagnet>Volt:	12		(61.0067.00)
3rd speed 1/min:		2nd speed 1/min:	
	1200	· · · · · · · · · · · · · · · · · · ·	
		Charge press. hPa:	1200
	5.706.30	Shutoff	40
	(5.406.60)	electromagnet Volt:	
Shutoff	†	Del. quantity cm3/:	
electromagnet>Volt:	12 +		(0.003.00)
	†	3rd speed 1/min:	
Supply-pump pressure	e characteristic: +	Charge press. hPa:	1200
	+	Shutoff	
1st speed 1/min:	600 +	electromagnet>Volt:	12
Charge press. hPa:	1200 +	Del. quantity cm3/:	19.529.5
Supply-pump	+		(18.530.5)
	3.203.80	4th speed 1/min:	2150
Shutoff	+	Charge press. hPa:	
electromagnet>Volt:	12	Shutoff	
2nd speed 1/min:		electromagnet>Volt:	12
Charge press. hPa:		Del. quantity cm3/:	
Supply-pump	1		(41.051.0)
pressure> bers	470 530 I	5th speed 1/min:	1000
Shutoff	4.705.50		
	12	Charge press. hPa:	1200
electromagnet>Volt:	16	Shutoff	40
3rd speed 1/min:		electromagnet>Volt:	
Charge press. hPa:	1200	Del. quantity cm3/:	
Supply-pump	† T		(65.5071.50)
	6.507.10	6th speed 1/min:	
Shutoff	<b>†</b>	Charge press. hPa:	1200
<pre>electromagnet&gt;Volt:</pre>	12 +	Shutoff	
4th speed 1/min:	1900 +	<pre>electromagnet&gt;Volt:</pre>	12
Charge press. hPa:	1200 +	Del. quantity cm3/:	68.069.0
Supply-pump	+	> 1000s.:	(66.071.0)
pressure> bar:	7.808.40	7th speed 1/min:	900
Shutoff	<del> </del>	Charge press. hPa:	1200
electromagnet>Volt:	12	Shutoff	
<b>33</b>	<u> </u>	electromagnet>Volt:	12
Overflow quantity at	toverflow valve	Del. quantity cm3/:	
over ton quarterly a			(64.572.5)
1st speed 1/min:	500	8th speed 1/min:	
		Charge press. hPa:	
Charge press. hPa:	- T		_
Shutoff	42	Shutoff	12
electromagnet>Volt:	16	electromagnet>Volt:	
	41.7083.40	Del. quantity cm3/:	
quantity> cm3/10s:		> 1000s.:	(45.5051.50)
2nd speed 1/min:			
Charge press. hPa:	1200 +		
Shutoff	+		
<pre>electromagnet&gt;Volt:</pre>		Electr. shutoff:	
Overflow :	55.60139.00		

1st speed 1/min: 350 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 12.00...16.00 1000s.: (9.00...19.00) cm3/: 4.0 Dispersion 1000s.: (5,0) 1/min: 310 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 28.0...37.0 1000s.: (26.0...40.0) 1/min: 430 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.0...3.0 1000s.: -Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 22.00...72.00 Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 2,7...2,9 LDA stroke mm: 6,8 mm: 43.5...47.5 Ya mm: 51.0...62.0 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control

position
Measurement point = edge of control
lever on distributor-head end

Yb = Distance between VE flange and speed-control lever in rated speed

lever on drive end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : PER Edition : 12.11.96 replaces : ISO-4113 Calibrating oil Injection pump : VE6/1251250R654 Type number : 0 460 426 247 Customer Part-No.: 2645F020 Customer-specific information Customer : PERKINS Engine : 1006E.6T Power KW: 120 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Opening bar: 247.00...253.00 Pressure> Perforated-plate mm: 0.5 diameter> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery Prestroke mm: -> (from BDC): -

Start of delivery block Piston stroke mm: 1.0 Outlet > Timing-device travel F24

Injection-pump setting values Test specifications in parentheses

Speed 1/min: 1000 Charge press. hPa: 1500 Setting value 5: 1,6...1,8 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1000 Speed Charge press hPa: 1500 Setting value bar: 6,60...7,20 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 900 Charge press. hPa: 1500 Del. quantity cm3/ 1000s.: 66,50...67.50 Shutoff electromagnet>Volt: 12 cm3/: 5.0 Dispersion 1000s.: (5.0) Full-load del. w/out charge press.: 1/min: 400 Speed Del. quantity cm3/ 1000s.: 49.0...50.0 Shutoff electromagnet>Volt: 12.0 Low-idle speed regulation

1/min: 300 Speed

Del. quantity cm3/

1000s.: 13,00...17.00 Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.5 1000s.: (6,5)

Full-load speed regulation

1/min: 1325 Speed Charge press hPa: 1500 Del. quantity cm3/

1000s.: 42.00...48.00

Shutoff

electromagnet>Volt: 12.0

Start:

1/min: 110 Speed Del. quantity cm3/: 80.00...140.00

mind> 1000s.: 80.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses 1st speed 1/min: 450 Timing-device characteristic: Charge-air pressure-setting point> hPa: 350 mm: 5.7 1/min: 900 LDA-stroke 1st speed hPa: 1500 Charge press Shutoff mm: 0,40...1.00 TD travel electromagnet>Volt: 12 mm: (0.00...1,40)Del. quantity cm3/: 60.0...61.0 electromagnet>Volt: 12 1000s.: (57.0...64.0) > 1/min: 1000 2nd speed 1/min: 1420 2nd speed hPa: 1500 Charge press. hPa: 1500 Charge press mm: 1,60...1,80 Shutoff TD travel mm: (1,10...2,30) electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 Shutoff 1000s.: (0.00...3.00) electromagnet>Volt: 12 1/min: 1100 3rd speed 1/min: 1375 3rd speed Charge press hPa: 1500 Charge press. hPa: 1500 mm: 2.10...2.90 Shutoff TD travel > mm: (1.80...3,20) electromagnet>Volt: 12 Del. quantity cm3/: 9.00...29.00 > 1000s.: (5.00...33.00) Shutoff electromagnet>Volt: 12 4th speed 1/min: 1325 Charge press. hPa: 1500 Supply-pump pressure characteristic: Shutoff 1/min: 500 1st speed electromagnet>Volt: 12 Del. quantity cm3/: 42.0...48.0 Charge press. hPa: 1500 1000s.: (39.0...51.0) 1/min: 1250 Supply-pump bar: 4,30...4,90 5th speed pressure> Charge press. hPa: 1500 Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 1/min: 1000 2nd speed Charge press. hPa: 1500 Del. quantity cm3/: 65.00...70.00 1000s.: (64.00...71.00) Supply-pump 1/min: 900 bar: 6.60...7.20 6th speed pressure> Charge press. hPa: 1500 Shutoff Shutoff electromagnet>Volt: 12 1/min: 1250 electromagnet>Volt: 12 3rd speed Del. quantity cm3/: 66.5...67.5 Charge press. hPa: 1500 1000s.: (63.5...70.5) Supply-pump bar: 7.60...8,20 7th speed 1/min: 500 pressure> Charge press. hPa: 1500 Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 Del. quantity cm3/: 62.5...68.5 Overflow quantity at overflow valve 1000s.: (61.5...69.5) 1/min: 400 8th speed 1/min: 400 1st speed Charge press. hPa: -Charge press. hPa: -Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 : 41.70...86.10 Del. quantity cm3/: 49.0...50.0 Overflow quantity> cm3/10s: (26.70...101.10) 1000s.: (46.0...53.0) 1/min: 1250 2nd speed Charge press. hPa: 1500 Shutoff Electr. shutoff: electromagnet>Volt: 12 : 55.60...139.00 Overflow 1/min: 300 quantity> cm3/10s: (40.60...154.00) 1st speed Del. quantity cm3/: 0.00...3.00

Delivery-quant. and breakaway char.:

> 1000s.: -Idle delivery: 1st speed 1/min: 300 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 13.0...17.0 1000s.: (9.0...21.0) cm3/: 6.5 Dispersion 1000s.: (6.5) 2nd speed 1/min: 400 Shutoff electromagnet>Volt: 12 Del. quentity cm3/: 0.00...3.00 > 1000s.: (0.00...3.00) 3rd speed 1/min: 275 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 16.0...24.0 1000s.: (15.0...25.0) Automatic starting fuel delivery: 1/min: 110 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 80.00...140.00 > 1000s.: (80.00...140.00) 2nd speed 1/min: 150 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 75.0...145.0 1000s.: (75.00...145.0) 1/min: 280 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 28.0...68.0 1000s.: (28.0...68.0) > Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Remarks:

Shutoff BOSCH-INJ.-PUMP TEST SPECIFICATIONS electromagnet>Volt: 24 Note inst. in remarks column Supply-pump pressure 1/min: 1000 Test sheet : FIA Speed Edition : 13,11,96 Charge press hPa: 1000 replaces Setting value bar: 6,50...7,10 Calibrating oil : ISO-4113 KSB/AFB valve > Volt: 24 : VE6/12F1350R674 Injection pump Shutoff Type number : 0 460 426 255 electromagnet>Volt: 24 Customer Part-No. : Full-load del. with charge press.: Customer-specific information 1/min: 650 Customer : IVECO-FIAT Charge press. hPa: 1000 Del. quantity cm3/ Engine : 8060.45.5000 1000s.: 62.00...63.00 KSB/AFB TEST BENCH REQUIREMENTS Volt: 24 valve Shutoff Overflow restricti: 1 463 456 303 electromagnet>Volt: 24 cm3/: 3.5Dispersion Calibrating-oil 1000s.: (5.0) return>temp. > °C with>thermometer> : 54.00...56.00 Full-load del. w/out charge press.: Inlet press., bar : 0.30...0.40 Speed 1/min: 500 Del. quantity cm3/ Calibrating nozzle-holder 1000s.: 52.0...53.0 > : 1 688 901 027 assembly> KSB/AFB 11 > Volt: 24 valve Opening Shutoff Pressure> bar: 247.00...253.00 electromagnet>Volt: 24.0 Perforated-plate Low-idle speed regulation diameter> mm: 0.5 1/min: 350 Speed Del. quantity cm3/ Test inj. tubing : 1 680 750 073 1000s.: 14.50...18.50 > KSB/AFB Outside diameter : 6.00 > Volt: 24 valve x Wall>thickness : 2.00 Shutoff mm: 450 electromagnet>Volt: 24 x Length> Del. quantity cm3/: 4.0 1000s.: 5.05) Start of delivery Prestroke mm: -> (from BDC): -Full-load speed regulation Injection-pump setting values Speed 1/min: 1550 Test specifications in parentheses Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 12.00...16.00 Timing-device travel > KSB/AFB 1/min: 1000 > Volt: 24 Speed valve Charge press. hPa: 1000 Shutoff Setting value mm: 1,4...1,6 electromagnet>Volt: 24.0 AFB/AFB valve > Volt: 24 Start:

	<b></b>	KSB/AFB	
Speed 1/min: 100	I	valve > Volt:	2/.
Del. quantity cm3/: 33.0	n ezn on I	Shutoff	<b>4</b>
mind> 1000s.: 33.0			27.
KSB/AFB	T T	electromagnet>Volt:	
	Ţ	3rd speed 1/min:	
Valve > Volt: 24 Shutoff	Ť	Charge press. hPa:	1000
	Ţ	Supply-pump	7:00 7:00
electromagnet>Volt: 24	†	pressure> bar:	7.007.00
**************************************	T	KSB/AFB	21
Inspection-pump test spe		<pre>valve &gt; Volt:</pre>	24
Test specifications in p	arentheses +	Shutoff	•
	†	electromagnet>Volt:	24
Timing-device characteri	stic:		<i>p</i>
4	†	Overflow quantity at	t overflow valve
1st speed 1/min: 340	. †		
Charge press hPa: 1000		1st speed 1/min:	
TD travel mm: 1,80	12,20	Charge press. hPa:	1000
> mm: -	+	KSB/AFB	
KSB/AFB	+	<pre>valve &gt; Volt:</pre>	24
valve > Volt: -	†	Shutoff	
electromagnet>Volt: 24	+	electromagnet>Volt:	
2nd speed 1/min: 470	+	Overflow :	
Charge press hPa: 1000	) +	quantity> cm3/10s:	(26.70101.10)
TD travel mm: 2,60	)3,80 +	2nd speed 1/min:	1350
> mm: -	+	Charge press. hPa:	1000
KSB/AFB	+	KSB/AFB	
valve > Volt: -	+	<pre>valve &gt; Volt:</pre>	24
Shutoff	+	Shutoff	
electromagnet>Volt: 24	+	electromagnet>Volt:	24
3rd speed 1/min: 1000	) <del> </del>	Overflow :	
Charge press hPa: 1000		quantity> cm3/10s:	
TD travel mm: 1.40			
	02.00)	Delivery-quant. and	breakaway chac.:
KSB/AFB	1	osovievy quantor and	ar cananay conar or
valve > Volt: 24	1		
Shutoff	<u> </u>	2nd speed 1/min:	1600
electromagnet>Volt: 24	1	Charge press. hPa:	
4th speed 1/min: 1100	1 1	KSB/AFB	1000
Charge press hPa: 1000		valve > Volt:	24
TD travel mm: 2.3.	, 50 T	Shutoff	LT
> mm: (1.9		electromagnet Volt:	24
KSB/AFB	1	Del. quantity cm3/:	
valve > Volt: 24	1		(0.003.00)
Shutoff	1	3rd speed 1/min:	
electromagnet>Volt: 24	1	Charge press. hPa:	
ctest and givet vott. LT	1	KSB/AFB	1000
Supply-pump pressure cha	macteristic:	valve > Volt:	2/.
authfachaith bressure cue		Shutoff	64
1st speed 1/min. 500	I	electromagnet>Volt:	2/.
1st speed 1/min: 500	Ţ		
Charge press. hPa: 1000	' T	Del. quantity cm3/: > 1000s:	
Supply-pump	T / 00		(8.0020.00)
pressure> bar: 3.40	74.00	4th speed 1/min:	
KSB/AFB	†	Charge press. hPa:	TUUU
valve > Volt: 24	†	KSB/AFB	2/
Shutoff	†	valve > Volt:	<b>24</b>
electromagnet>Volt: 24	, †	Shutoff	3/
2nd speed 1/min: 1000	1	electromagnet>Volt:	
Charge press. hPa: 1000	†	Del. quantity cm3/:	
Supply-pump	†		(29.049.0)
pressure bar: 6.50	J/.1U +	5th speed 1/min:	7.55 <b>U</b>

Charge press. hPa: KSB/AFB	1000	Automatic starting fuel delivery:
valve > Volt:	24	1st speed 1/min: 100
Shutoff	1	KSB/AFB
electromagnet>Volt:	24	valve > Volt: 24
Del. quantity cm3/:	53 50 56 50 I	Shutoff
> 1000s.:	(51.5058.50)	
/ 10005.:	(51.5050.50)	electromagnet>Volt: 24
6th speed 1/min:		Del. quantity cm3/: 33.0083.00
Charge press. hPa: KSB/AFB	<del>}</del>	> 1000s.: -
valve > Volt:	24 +	2nd speed 1/min: 140
Shutoff	+	KSB/AFB
electromagnet>Volt:		valve > Volt: 24
Del. quantity cm3/:		Shutoff
> 1000s.:	(59.066.0)	elestromagnet>Volt: 24
7th speed 1/min:	500 +	Del. quantity cm3/: 75.0125.0
Charge press. hPa:	1000	> 1000s.: -
KSB/AFB	+	
<pre>valve &gt; Volt:</pre>	24	3rd speed 1/min: 230
Shutoff	1	KSB/AFB
electromagnet>Volt:	24	valve > Volt: 24
Del. quantity cm3/:		Shutoff
	(60.067.0)	electromagnet>Volt: 24
/ 10003	T	Del. quantity cm3/: 50.070.0
	T	> 1000s.: -
	Ţ	7 10005
Electr. shutoff:	Ť	Shutoff alactromagnet:
Etectr. Shutorr:	Ţ	Shutoff electromagnet:
A = + =	700	O •
1st speed 1/min:		Cut-in
Del. quantity cm3/:		>min voltage : 20.0
> 1000s.:	- <del>†</del>	Rated voltage : 24.0
KSB/AFB	+	
valve > Volt:	- +	Mounting and assembly dimensions:
	+	
Idle delivery:	†	Designation
	+	K mm: 3.53.7
1st speed 1/min:	350	KF mm: -
>KSB/AFB	+	MS1 mm: 1.21.5
<pre>valve &gt; Volt:</pre>	24 +	Ya mm: 37.939.9
Shutoff	+	Yb mm: 42.147.3
electromagnet>Volt:	24	
Del. quentity cm3/:		Remarks:
	(11.521.5)	<b>:</b>
Dispersion cm3/:		• •
> 1000s.:		•
2nd speed 1/min:		
KSB/AFB	1	
valve > Volt:	24 I	
Shutoff	<b>T</b>	
	7	
electromagnet>Volt:	7 00 7 00	
Del. quantity cm3/:	(0.00. 7.00)	
	(0.003.00)	
3rd speed 1/min:	<i>5</i> 00 +	
KSB/AFB	+	
valve > Volt:	24 +	
Shutoff	+	
electromagnet>Volt:	24	
Del. quantity cm3/:		
	(36.546.5)	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: MAN Test sheet

Edition : 4.11.1996

Replaces

Test oil : ISO-4113

Combination no. : 0 402 648 977

Injection pump

Pump designation: PE8P120A520LS7818-2

EP type number : 0 412 628 887

Governor

: RQV300...1150PA1039 Governor design.

-2K

: 0 421 815 316 Governer no.

Customer-spec. information Customer . MAN

: D2848LE401 Engine

: 500.0 1st version kW >: 2300 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. \*C> : 38...42

Overflow valve

: 1 417 413 025 >

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 019 assembly>

Opening |

: 207...210 pressure, bar>

Orifice plate

diameter mm> : 0,8

: 1 680 750 075 Test Lines

Outside diameter x Wall>thickness

: 8.00x2.50x1000 x Length mm>

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

: 4.50...4.60 Prestroke mm : (4.45...4.65)

Rack travel in mm : 9.00...12.00

: 8- 7- 2- 6- 3- 5- 4 -1

Phasing : 0-45-90-135-180-225-

Phasing : 270-315 Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

Firing order

1st speed rpm: 1150

Rack travel in mm : 14.40...14.50

Del.quantity cm3/: 32.9...33.1

100 s: (32.6...33.4) >

cm3 : 0.5Spread

> > 100 s: (0.9)

rpm : 500 2nd speed

Rack travel in mm: 9.6...10.0 Del.quantity cm3/: 16.9...17.1

100 s: (16.6...17.4) cm3 : 0.4Spread

100 s: (-) > rpm : 300 3rd speed

Rack travel in mm : 7.0...7.2

Del.quantity cm3/ : 5.2...6.0\*

100 s: (-)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

rpm : 300 1st speed

travel mm : 2.00...2.50

2nd speed rpm : 379

: 3.28...3.78 travel mm

3rd speed rpm : 450

: 4.00...4.50 travel mm

rpm : 795 4th speed

: 6.63...7.13 travel mm

5th speed rpm : 1450

: 13.00...14.00 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

Speed rpm : 1280

Rack travel in mm : 12.10...14.70

#### FULL LOAD DELIV. AT FULL LOAD STOP FUEL DELIVERY CHARACTERISTICS 1st version rpm : 1150 Speed 1st version Aneroid pressure h: 1500 Aneroid pressure h: 1500 Del.quantity : 329.0...331.0 rpm : 700 1000 : (326.0...334.0) Del.quantity cm3/: 271.0...277.0 > 1000 s: (272.0...280.0) cm3 : 5.00 Spread 1000 : (9.00) cm3 : 8.00 Spread > 1000 s: (12.0) Aneroid pressure h: 1500 RATED SPEED Speed rpm : 900 Del.quantity cm3/: 299.0...305.0 > 1000 s: (296.0...308.0) 1st version Control lever cm3 : 6.00 position> degrees: 116...124 Spread 1000 s: (12.0) > Setting point: Aneroid pressure h: -Speed rpm : 1280 rpm : 500 Speed Del.quantity cm3/: 169.0...171.0 > 1000 s: (166.0...174.0) Rack travel in mm: 13.4 Testing: 1st rack travel in: 13.40 rpm : 1187...1205 **BREAKAWAY** Speed 2nd rack travel in: 4.00 rpm : 1310...1340 Speed 1st version 4th rack travel in: 1450 1mm rack travel less than rpm : 0.00...1.00 Speed full load rack tr: 13.40 rpm : 1187...1203 LOW IDLE 1 Speed Control lever position degrees: 73...81 STARTING FUEL DELIVERY Testing: Speed rpm : 200 rpm : 100 Speed Minimum rack trave: 8.20 Del.quantity cm3/: 100.0...120.0 \* rpm : 300 1000 s: (-) Rack travel in mm : 7.00...7.20 Rack travel in mm : 2.00 rpm : 100 Speed Del.quantity cm3/: 0 \*\* > 1000 s: (-) rpm : 280...410 Speed Aneroid/Altitude Compensator Test HIGH IDLE 1st version 1st version Speed rpm : 500 Rack travel in mm : < 7.00 Setting Del.quantity cm3/ : G \*\* Speed rpm : 1150 1000 s: (-) Pressure hPa : 1500 Rack travel mm : 14.40...14.50 2nd version Speed rpm : 500 Rack travel in mm : < 7.50 Measurement 1/min : 1150 Speed Del.quantity cm3/: < 50.0 \*\* > 1000 s: (-) 1st pressure hPa : -Rack travel in m: 9.60...10.00 2nd pressure hPa : 480 3rd version Rack travel in m: 10.10...10.20 Speed rpm : 500 Rack travel in mm : 8.20...8.40 3rd pressure hPa : 1000 Rack travel in m: 12.30...12.60 Del.quantity cm3/: > 125.0

1000 s: (-)

# LOW IDLE

Speed rpm : 300 Rack travel in mm : 7.00...7.20 Del.quantity cm3/: 52.0...60.0 \* > 1000 s: (12.0...22.0)

cm3 : 4.50 1000 s: (7.50) Spread

# Remarks:

: MAN-NR. 3-7224

\* applies to cylinders 2, 3, 4 and 8 \*\* applies for cylinders 1, 5, 6, and 7

# **APPLICATION**

Ship

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : NAV Edition : 13.12.96 Replaces Test oil : ISO-4113 Combination no. : 0 402 746 981 Injection pump Pump designation : PES6P120A320LS7322 EP type number : 0 412 726 904 Governor Governor design. : RQV350...1000PA1134 : 0 421 815 403 Governer no. Customer-spec. information Customer : NAVISTAR Engine : DTA-531 1st version kW : 224.0 Rated speed >: 2000 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 2 417 413 076 Inlet press., bar : 2.80 Test nozzle holder assembly> : 1 688 901 101 Opening pressure, bar> : 207...210 Orifice plate diameter mm> : 0,6 Test lines : 1 680 750 008 Outside diameter x Wall>thickness x Length mm> : 6.00x2.00x600

(A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values \_\_\_\_ BEGINNING OF DELIVERY Test pressure, bar: 22...24

Prestroke mm : 2.90...3.00 : (2.85...3.05) Rack travel in mm : 10.00...13.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ BASIC SETTING rpm : 1000 1st speed Rack travel in mm : 14.70...14.80 Del.quantity cm3/: 22.6...22.8 100 s: (22.3...23.1) cm3 : 0.8Spread 100 s: (1.2) rpm : 325.0 2nd speed Rack travel in mm : 6.0...6.2 Del.quantity cm3/: 1.8...2.4 100 s: (1.6...2.6) cm3 : 0.5 Spread 100 s: (0.9) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 350 travel mm : 1.80...2.00 2nd speed rpm : 500 : 3.90...4.30 travel mm 3rd speed 008 : mgr : 6.50...6.90 travel. mm 4th speed rpm : 1050 : 9.10...9.30 travel mm rpm : 1150 5th speed : 10.30...11.70 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1000 Speed Rack travel in mm : 15.2...17.8 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1000 Aneroid pressure h: 1200 Del.quantity : 220.0...231.0)

Spread cm3 : 8.00 > 1000 : (12.00) RATED SPEED 1st version Control lever position> degrees: 115...127 Testing: 1st rack travel in: 13.70 rpm : 1040...1070 Speed 2nd rack travel in: 4.00 rpm : 1170...1180 Speed 4th reck travel in: 1250 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 87.5...79.5 Setting point w/out bumper spring rom : 325 Speed Rack travel in mm : 5.0 Testing: Srie€d : 275 rpm Minimum rack trave: 7.00 rpm : 350 Rack travel in mm : 4.90...5.10 TORQUE CONTROL Dimension a mm : ? 1st speed rpm : 1000 Rack travel in m: 14.70...14.80 2nd speed rpm : 650 Rack travel in m: 14.20...14.40 3rd speed rpm : 500 Rack travel in m: 13.40..13.80 Aneroid/Altitude Compensator Test 1st version Settina : 1000 Speed מכיז Pressure hPa : 1200 Rack travel mm : 14.70...14.80

Torque control curve - 1st version Measurement 1/min: 1000 Speed 1st pressure hPa : -Rack travel in m: 10.60...11.00

2nd pressure hPa : 350

3rd pressure hPa : 855

Rack travel in m: 11.70...11.80

Rack travel in m: 13.60...14.00

START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rom : 650 Del.quantity cm3/: 242.0...248.0 > 1000 s: (239.0...251.0) cm3 : 8.00 Spread 1000 s: (12.0) > Ameroid pressure h: -: 1000 Speed rom Del.quantity cm3/: 126.5...130.5 > 1000 s: (124.5...132.5) Spread cm3 : -1000 s: (-) > **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 13.70 rpm : 1040...1070 Speed STARTING FUEL DELIVERY : 100 Speed rpm Del.quantity cm3/: 110.0...150.0 1000 s: (100.0...150.0) Rack travel in mm : 19.00...21.00 LOW IDLE rpm : 325 Speed Rack travel in mm : 5.80...6.20 Del.quantity cm3/: 18.5...24.5 1000 s: (16.5...26.5) cm3 : 5.00Spread 1000 s: (9,00) > Remarks: : NAVISTAR #1823155C91 Setting and blocking of pointer of

start-of-delivery sensor on cyl. 1 start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM

Edition : 25.10.96

Replaces : -

Test oil : ISC-4113

Combination no. : 0 403 466 138

Injection pump

Pump designation : PES6MW100/120RS1178

EP type number : 0 413 406 160

Governor

Governor design. : RSV350...1250MW2A332

Governer no. : 0 420 085 220

Customer-spec. information

Customer : CDC

Engine : 6 CTA

1st version kW : 204.0

Rated speed >: 2500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. \*C> : 38...42

Overflow valve

> : 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly> : 1 688 901 017

Opening |

pressure, bar> : 207...210

Orifice plate

diameter mm> : 0,6

Test lines : 1 680 750 014

Outside diameter

x Wall>thickness

x Length mm> : 6.00X2.00X600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1250

Rack travel in mm : 14.10...14.20

Del.quantity cm3/: 15.5...15.7

> 100 s: (15.2...16.0)

Spread cm3 : 0.4

> 100 s: (0.7)

2nd speed rpm : 350.0 Rack travel in mm : 5.7...5.9

Del.quantity cm3/: 2.0...2.4 > 100 s: (1.6...2.8)

Spread cm3: 0.3

> 100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

Speed rpm: 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 5.00

terok betering x 1 3100

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250 Aneroid pressure h: 900

Del.quantity : 155.5...157.5

> 1000 : (152.5...160.5)

Spread cm3 : 4.00 > 1000 : (7.50)

RATED SPEED

1st version Control lever

position> degrees: 107...115

Setting point:

Speed rpm : 800 Rack travel in mm : 0.65

Testing:

1st rack travel in: 13.10

Speed rpm : 1305...1315

2nd rack travel in: 4.00

Speed rpm : 1425...1455

3rd rack travel in: 4.00

Speed rpm : 1440...1470

4th rack travel in: 1650

Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 80...88

Setting point w/out bumper spring

Speed rpm : 350 Rack travel in mm : 6.3

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 350

Rack travel in mm : 6.20...6.40

Aneroid/Altitude Compensator Test

1st version Setting

Speed rpm : 500 Pressure hPa : 900

Rack travel mm : 14.10...14.20

Measurement

Speed 1/min: 500

1st pressure hPa : -

Rack travel in m: 10.60...10.80

2nd pressure hPa : 255

Rack travel in m: 11.60...11.80

3rd pressure hPa : 435

Rack travel in m: 13.00...13.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm: 500

Del.quantity cm3/: 88.5...92.5 > 1000 s: (86.5...94.5)

BREAKAWAY

1st version

1mm rack travel less than

>

full load rack tr: 13.10

Speed rpm : 1305...1315

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 160.0...180.0 > 1000 s: (155.0...185.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.20...6.40 Del.quantity cm3/ : 20.0...24.0 > 1000 s: (17.5...26.5)

Spread cm3 : 3.50 > 1000 s: (5.50)

Remarks:

: CDC # 3921123

Start-of-delivery mark at 14° angular displacement of the cam after start of

delivery of cylinder 1

608

### BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.01.96 Test oil : ISO 4113

Combination No. : 0 402 046 824

Injection pump

Pump designation : PES6P120A320RS3279 EP type number : 0 412 026 758

Governor

Governer design. : RQ275/1050PA999-5 : D 421 801 663 Governer no.

Cust. part No. : CCEP-5112B 66-175

Customer-spec. information Customer : RVI

Motor : MIHR 062045 A/3

Power KW : 186.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1 Inlet press. bar :

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 : +- 0.30 Phasing

Phasing Tolerance

Check

tolerance  $^{\circ}NW$  : +- 0.50

Start of delivery mark

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 10.50 Tolerance mm :  $\leftarrow$  0.50

### CRT ZERO POSITION

Rack travel in mm : 11.25
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 700	+ guide sleeve + travel mm : 5.14
Del. quantity cm3/1000 strokes : 158.0	Tolerance mm : +- 0.10 + Rated speed rpm : 710
Tolerance cm3/1000 strokes : + 1.0	+ Rated speed rpm : 710 + guide sleeve + travel mm : 6.00 + Tolerance mm : + 0.10
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1380
Spreed	travel mm : 11.50 Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : 5.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. 9.0	 ‡
Detail aread was 275	+ control lever + position degree : 109 + Rated speed rpm : 750
Rated speed rpm : 275	Rack travel in mm : 20.00
Rack travel in mm: -4.50 Tolerance mm: : +- 0.10 Del. quantity	- Tolerance mm : +- 0.80
cm3/1000 strokes : 21.0 Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 2.0 Check tolerance	Rated speed rpm : 700 Aneroid pressure
cm3/1000S. : +- 5.0 Spreed	hPa : 1000 - Del. quantity
Tolerance cm3/1000 strokes : 8.0	cm3/1000 strokes : 158.0 Tolerance
Check tolerance cm3/1000S. : 12.0	cm3/1000 strokes : +- 1.0 Check tolerance
	cm3/1000s. : + 4.0 Spreed
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : 5.0 Check tolerance
GUIDE SLEEVE TRAVEL	— i check totel arice : 9.0
Rated speed rpm : 1126	<del></del>
guide sleeve	CONTROL LEVER
travel mm : 6.38 Tolerance mm : + 0.10	control lever
Rated speed rpm : 300 guide sleeve	+ position degree : 274.0 + tolerance degree : + 4.0
travel mm : 2.35 Tolerance mm : +- 0.10	RATED SPEED -1.00
Rated speed rpm : 1050	+ Rated speed rpm : -1.00 + Rated speed rpm : 1138 + Tolerance 1/min : + 8
guide sleeve travel mm : 6.00	rack travel mm : -7.20
Tolerance mm : + 0.10	+ Rated speed rpm : 1245 + Tolerance 1/min : +- 15
Rated speed rpm : 582	+
G10	

rack travel mm Tolerance mm Rated speed rpm	: +- 0.55	+ Tole + Star + Rate	travel mm erance mm et interlock ed speed rpm	: > 100		
LOW IDLE		+	ed speed rpm	: < 195		
control lever position degree tolerance degree		+ Chec	ed 1/min	: > 80 : < 215		
Testing:		+ FUEL	FUEL DELIVERY CHARACTERISTICS			
Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm	: -4.50 : → 0.10 : -9.25	hPa + Rate + Del. + cm3/	roid pressure ed speed rpm quantity 1000 strokes			
Tolerance 1/min		+ cm3/	1000 strokes tolerance	: +- 3.0		
Rated speed rpm	: 200		1000s.	: +- 6.0		
CRT mm max.	: < -3.00	+ hPa	roid pressure	: -		
TORQUE CONTROL		+ Dei.	ed speed rpm quantity 1000 strokes			
Rated speed rpm	: 700	+ Tole	erance /1000 strokes			
Rated speed rpm Tolerance mm		+ Chec	tk tolerance 11000s.			
ANEROID/ALTITUDE COMPENSATOR TEST		STAR	RTING FUEL DEL	IVERY		
SETTING		+ cm3/	quantity 1000 strokes erance	: 155.0		
Rated speed rpm Pressure hPa	: 500 : 1000	+ cm3/ + Chec	1000 strokes ck tolerance 1000s.	: + 10.0 : + 14.6		
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : -1.20 : + 0.20	+				
MEASUREMENT		+	IDLE	. 375		
Rated speed rpm	: 500	+ Del.	ed speed rpm quantity 1000 strokes			
Pressure hPa rack travel mm	: 220 : -0.45	+ Tole + cm3/	erance 1000 strokes			
Tolerance mm Pressure hPa	: <b>←</b> 0.15 : 160		ck tolerance /1000s. eed	: +- 5.0		
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	1 -6.4	•			

Tolerance : 8.0 Check tolerance cm3/1000s. : 12.0

End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96 Test oil : ISO 4113

Combination No. : 0 402 640 804

Injection pump

Pump designation : PE12P12OA320LS7807

EP type number : 0 412 620 806

Governor

Governer design. : RQV350...1050PA842

Governer no. : 0 421 813 587

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 A
Power KW : 390.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 12-1-5- 9-8

: - 4-11-10-2 : - 7

Phasing : 0-45-60-105-120

: -180-225-240-285

: -345

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.60 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes :	200.0	Tolerance mm : +- 0.20
Tolerance cm3/1000 strokes : +	- 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +	- 4.0	control lever position degree : - 1 Rated speed rpm : 1150
Spreed		,
Tolerance cm3/1000 strokes :	5.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Check tolerance cm3/1000s.	9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
		Rated speed rpm : 600 Aneroid pressure
Rated speed rpm :	350	hPa : 660 Del. quantity cm3/1000 strokes : 200.0
Tolerance mm : +	5.55 - 0.10	Tolerance cm3/1000 strokes : +- 1.0
Del. quantity cm3/1000 strokes : Tolerance	19.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
cm3/1000 strokes : + Check tolerance	- 3.0	Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : +-	- 4.5	Check tolerance cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : Check tolerance	8.0	
cm3/1000s. :	12.0	CONTROL LEVER
(B) SETTING OF INJECT: WITH GOVERNOR	ION PUMP	control lever position degree : 63.0 tolerance degree : +- 4.0
		RATED SPEED
GUIDE SLEEVE TRAVEL	‡	rack travel mm : 11.00 Rated speed rpm : 1095
Rated speed rpm : guide sleeve	1200	Tolerance 1/min : + 5
travel mm : + Tolerance mm : +	8.50 - 0.20	rack trave! mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : +- 15
Rated speed rpm :	350	
guide sleeve travel mm :	2.00	rack travel mm : 0.50 Tolerance mm : +- 0.50
Tolerance mm : +	- 0.10	Rated speed rpm : 1300
Rated speed rpm : guide sleeve	700	
travel mm : +- Tolerance mm : +-	4.20 - 0.20	LOW IDLE
Rated speed rpm : guide sleeve	1100	control lever
travel mm :	7.00	position degree : 14.0

tolerance degree	: + 4.0	‡	Rated speed rpm Rated speed rpm	: > 100 : < 270
Testing:		†	Check	
Rated speed rpm	: 350	I	speed 1/min	: > 80
rack travel mm		Ţ	Check	. > 00
Tolerance mm	: + 0.10	1	speed 1/min	: < 290
Rated speed rpm	: 250	Ī	FUEL DELIVERY CHA	PACTERISTICS
CRT mm min.	: > 7.10	+		WAG ISKID I I O
Dated aread are	: 500	†	Aneroid pressure hPa	: 1100
Rated speed rpm	: 500	Ī	Rated speed rpm	
***		I	Del. quantity	. 1050
TORQUE CONTROL		I	cm3/1000 strokes	: 172.0
, , , , , , , , , , , , , , , , , , , ,		· 1	Tolerance	
Rated speed rpm	: 600	+	cm3/1000 strokes	: +- 2.0
rack travel mm Tolerance mm	: 13.60	+	Check tolerance	
Tolerance mm	: <b>←</b> 0.10	+	cm3/1000s.	: +- 5.0
	4070	+	Spreed	
Rated speed rpm	: 1050	†	Tolerance	
rack travel mm Tolerance mm	12.10	†	cm3/1000 strokes Check tolerance	
Office at the mit.	. +- 0.10	I	cm3/1000s.	• 12 0
Rated speed rpm	: 975	**********	(1107 (0000)	
rack travel mm	12.70	1	Aneroid pressure	
rack travel mm Tolerance mm	: <b>←</b> 0.10	+	hPa	: 1100
		+	Rated speed rpm	: 750
Rated speed rpm	: 875	+	Del. quantity	
Rated speed rpm rack travel mm Tolerance mm	: 13.30	+	cm3/1000 strokes	: 206.0
Tolerance mm	: <b>←</b> 0.10	†	Tolerance	
Datad aread are	. 750	†	cm3/1000 strokes Check tolerance	: +- 2.0
Rated speed rpm rack travel mm	: 75U • 13 An	I	cm3/1000s.	: + 5.0
Tolerance mm	: +- 0.10	$\overline{\downarrow}$	Spreed	
		4	Tolerance	
<del></del>		<del></del> }	cm3/1000 strokes	: 8.0
ANEROID/ALTITUDE		+	Check tolerance	
COMPENSATOR TEST		‡	cm3/1000s.	: 12.0
		+	Aneroid pressure	4400
9_adama   NA ==++	Jan	†	hPa	: 1100
2-stage LDA sett	ing	1	Rated speed rpm Del. quantity	1000
Rated speed rpm	: 600	I	cm3/1000 strokes	: 152.0
Pressure hPa	: 660	Ţ	Tolerance	. 12610
Joseff in G		1	cm3/1000 strokes	: +- 2.0
MEASUREMENT		+	Check tolerance	
		+	cm3/1000s.	: <del></del> 5.0
Pressure hPa	: 350	+	Spreed	
rack travel mm	: -2.10	†	Tolerance	. 0.0
Tolerance mm	: +- 0.05	†	cm3/1000 strokes	: 8.0
Pressure hPa	: 500	Ţ	Check tolerance cm3/1000s.	: 12.0
rack travel mm		I	UND/ 10003.	• 16.0
Tolerance mm		1	Aneroid pressure	
. T. T. T. MINA MAN		1	hPa	: -
Start interlock		+	Rated speed rpm	: 500
		+		

Del. quantity
cm3/1000 strokes : 137.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
Pel. quantity
cm3/1000 strokes : 230.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 14.0

### LOW IDLE

Rated speed rpm 350 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s.: **←** 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W4CD/...

Edition : 05.03.96 Test oil : ISO 4113

combination No. : 0 402 646 760

Injection pump

Pump designation : PE6P12OA320LS7834 EP type number : 0 412 626 853

Governor

Governer design. : RQ300/1050PA1030-23

Governer no. : 0 421 801 769

Cust. part No. : 0260743502

Customer-spec. information Customer : MB-NFZ : 0M401 LA Motor : 230.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 : +- 0.1 Tolerance bar

Tolerance l/h: + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar  $: \leftarrow 1.5$ 

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : +- 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1-

Phasing : 0-60-120-180-240

: 0-360

Tolerance : +- 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm: 14.80 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 230.0

Tolerance cm3/1000 strokes : +- 1.0

G17

		+ Tolerance mm : +- 0.10
Check tolerance cm3/1000s.	: +- 4.0	Rated speed rpm : 1270 guide sleeve
Spreed		travel mm : 11.50 Tolerance mm : + 0.50
Tolerance		+
cm3/1000 strokes	: 5.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s.	: 9.0	+
		control lever position degree : 109 Rated speed rpm : 600
Rated speed rpm	: 300	† + Rack travel in mm : 20.00
Rack travel in mm Tolerance mm Del. quantity		Tolerance mm : +- 0.80
cm3/1000 strokes Tolerance	: 13.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: +- 3.0	Reted speed rpm : 550
Check tolerance cm3/1000s.	: + 6.0	+ Aneroid pressure + hPa : 1000
Spreed	•	Del. quantity
Tolerance cm3/1000 strokes	: 6.0	cm3/1000 strokes : 230.0 Tolerance
Check tolerance	: 10.0	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s.	. 10.0	- cm3/1000s. : +- 4.0 - Spreed
(B) SETTING OF INJ WITH GOVERNOR	JECTION PUMP	Tolerance : 5.0
	·	+ Check tolerance + cm3/1000s. : 9.0
GUIDE SLEEVE TRAVE	EL ·	
Rated speed rpm guide sleeve	: 1104:	CONTROL LEVER
travel mm	: 6.51	+
Tolerance mm	: + 0.10	control lever position degree ; 100.0
Rated speed rpm guide sleeve		tolerance degree : +- 4.0
guide sleeve travel mm Tolerance mm	: 1.78	RATED SPEED
Tolerance mm	: ← 0.70	rack travel mm : 13.80 Rated speed rpm : 1098
Rated speed rpm	: 1050	Tolerance 1/min : +- 8
guide sleeve travel mm Tolerance mm	: 6.00	† + rack travel mm : 4.00
Tolerance mm	: ← 0.10	Rated speed rpm : 1195 Tolerance 1/min : +- 15
Rated speed rpm		rack travel mm : 0.75
guide sleeve travel mm Tolerance mm	: 4.00	Tolerance mm : + 0.75
Tolerance mm	: <del>-</del> 0.10	Rated speed rpm : 1300
Rated speed rpm guide sleeve	: 550	<u> </u>
travel mm	: 6.90	}

LOW IDLE	
control lever position degree tolerance degree	: 74.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.20 : ← 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 405 : +- 20
Rated speed rpm	: 200
CRT mm min.	: > 7.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 550 : 14.80 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 14.80 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 14.80 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : 1000 : 14.80 : + 0.05
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 400 : 10.50 : + 0.15
MEASUREMENT	
Rated speed rpm	: 400
Pressure hPa	: 400
-4.4	

rack travel mm Tolerance mm	: 12.90 : + 0.20
Pressure hPa rack travel mm Toleranse mm	: 600 : 14.15 : ← 0.20
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check speed 1/min Check	: > 80
speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1000 : 1050
Del. quantity cm3/1000 strokes	: 229.0
Tolerance cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance cm3/1000S. Spreed	: <del>←</del> 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0
Aneroid pressure hPa Rated speed rpm	: - : 500
Del. quantity cm3/1000 strokes	: 129.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S. Spreed	: 4.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity	. 240.0

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : +- 15.0

Check tolerance		
cm3/1000s.	: +-	19.0

# LOW IDLE

Rated speed rpm	:	300	
Del. quantity cm3/1000 strokes	:	13.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s.	: +-	6.0	
Spreed Tolerance			
cm3/1000 strokes Check tolerance	:	6.0	
cm3/1000s.	:	10.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.06.96 Edition Test oil : ISO 4113

Combination No. : 0 402 776 829

Injection pump

Pump designation : PES6P120A720RS7399 EP type number : 0 412 726 951

Governor

Governer design. : RSV475...1050P0A547

: 11

Governer no. : 0 421 833 510

Cust. part No. : RE65509

Customer-spec. information Customer : DEERE Motor : 6101 A

Motor : 6101 AT012 Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

rnasing : 0-60-120-180-240
Tolerance : +- 1 20

Check

tolerance \*NW : + 0.75

Start of delivery mark

\*NW after s.o.d. : 7.00

Tolerance : + 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.30 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 243.5	Aneroid pressure hPa : 2300
Tolerance cm3/1000 strokes : +- 1.0	Del. quantity cm3/1000 strokes : 243.5 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 4.0	cm3/1000s. : + 4.0 Spreed
Spreed	Tolerance cm3/1900 strokes : 5.0
Talerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. 9.0	
	CONTROL LEVER
Rated speed rpm : 475	<ul> <li>control lever</li> <li>position degree : 95.0</li> <li>tolerance degree : +- 4.0</li> </ul>
Rack travel in mm : 5.80	<u>.</u>
Tolerance mm : +- 0.10	+ RATED SPEED
Del. quantity	rack travel mm : 12.30
cm3/1000 strokes : 28.0	+ Rated speed rpm : 1125
Tolerance : + 3.0	Tolerance 1/min : +- 5
Check tolerance	+ - rack travel mm : 4.00
cm3/1000s. : +- 5.0	Rated speed rpm : 1195
Spreed	Tolerance 1/min : +- 5
Tolerance	Total and militial and a second secon
cm3/1000 strokes : 8.0	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 12.0	Rated speed rpm : 1300
	+
	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : 1195
GUIDE SLEEVE POSITION	LOW IDLE
COLUMN CO	
control lever	T control lever
position degree : - 3	position degree : 75.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
	+ Rated speed rpm : 475_
governor_spring	rack travel mm : 5.30
pre-tension (20)	Tolerance mm : + 0.10
click setting x : 4.00	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 475
	rack travel mm : 5.80
Rated speed rpm : 1050	Tolerance mm : + 0.10

Rated speed rpm 100 CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm 1050 13.30 rack travel mm Tolerance mm : +- 0.05 Rated speed rpm 750 14.90 rack travel mm Tolerance mm : **+-** 0.20 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 2300 Pressure hPa 500 Rated speed rpm rack travel mm 11.00 Tolerance mm : +- 0.10 **MEASUREMENT** Rated speed rpm 500 : Pressure hPa 1570 14.00 rack travel mm : +- 0.20 Tolerance mm Pressure hPa 750 rack travel mm 12.00 Tolerance mm : **←** 0.05 Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 2300 750 Rated speed rpm Del. quantity cm3/1000 strokes : 316.5 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s.6.0 Aneroid pressure hPa

Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 176.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s.: +- 4.0 STARTING FUEL DELIVERY 100 Rated speed rpm 20.50 rack travel mm Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance cm3/1000s.: **←** 25.0

LOW IDLE Rated speed rpm 475 Del. quantity cm3/1000 strokes : 28.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s.: +-5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance : cm3/1000s. 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.05.96 Test oil : ISO 4113

Combination No. : 0 400 876 404

Injection pump

Pump designation : PES6A95D410RS2835 EP type number : 0 410 896 896

Governor

Governer design. : RSV650...1050A8C2263

Governer no. : 0 420 232 583

Cust. part No. : 87 800 648

Customer-spec. information

Customer : FNH-GEOTECH

Motor : 7.5 L Power KW : 149.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

40 temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.60 Tolerance mm : +- 0.05 Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm: 14.50 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 151.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : <del>+-</del> 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance + cm3/1000s. : 8.0 +	
	CONTROL LEVER
1	control lever
Rated speed rpm : 650	position degree : 83.0 tolerance degree : +- 4.0
Rack travel in mm: 5.40	•
Tolerance mm : + 0.10 + Del. quantity +	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes : 23.5	MOSELIDEL GOVERNON SELLTING
Tolerance +	Rated speed rpm : 1078
cm3/1000 strokes : + 2.0 + Check tolerance	rack travel mm : 12.10
cm3/1000s. : + 4.5	Rated speed rpm : 1118
Spreed	Tolerance 1/min : +- 5
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : 5.5 + Check tolerance +	rack travel mm : 0.85
cm3/1000s. : 9.0	Tolerance mm : +- 0.55
+	Rated speed rpm : 1225
(B) SETTING OF INJECTION PUMP +	
WITH GOVERNOR +	Rated speed rpm : 1079
+	rack travel mm : 12.10
†	Dated aread non-
GUIDE SLEEVE POSITION	Rated speed rpm : 1119 Tolerance 1/min : +- 5
+	rack travel mm : 4.00
†	mark through my
control lever + position degree : - 3 +	rack travel mm : 0.85 Tolerance mm : +- 0.55
Rated speed rpm : 800 +	Rated speed rpm : 1225
Post toward to an a 0.50	
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	Rated speed rpm : 1080
1	rack travel mm : 12.10
governor spring +	
pre-tension + click setting x : 3.00 +	Rated speed rpm : 1120 Tolerance 1/min : +- 5
T	rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85 Tolerance mm : +- 0.55
Rated speed rpm : 750	Rated speed rpm : 1225
Aneroid pressure +	
hPa : 1200 +	Dated aread man . 4004
Del. quantity + cm3/1000 strokes : 151.5 +	Rated speed rpm : 1081 rack travel mm : 12.10
Tolerance	
cm3/1000 strokes : + 1.0 +	Rated speed rpm : 1121
Check tolerance cm3/1000s. : +- 3.0 +	Tolerance 1/min : +- 5 rack travel mm : 4.00
Spreed +	. 4011 01 41 0 1 IMII . T. UU
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 3.5 + Check tolerance +	Tolerance mm : + 0.55 Rated speed rpm : 1225
cm3/1000s. : 8.0	nated speed (pill . 122)
+	Badad and d
+	Rated speed rpm : 1082

rack travel mm	. 12 10	
Lack flasef mil	12.10	- - Rated speed rpm : 1025
Rated speed rpm	• 1122	rack travel mm · 13 30
Tolerance 1/min		rack travel mm : 13.30 Tolerance mm : +- 0.10
rack travel mm	. , , , , ,	
rack travet mm	; 4.00	Datad award awar a 075
made Assessed ass	. 0.05	Rated speed rpm : 975 - rack travel mm : 13.65 - Tolerance mm : +- 0.15
rack travel mm	: 0.85	rack travel mm : 13.05
Tolerance mm Rated speed rpm	: <del>+</del> 0.55	- Tolerance mm : +- U.15
Rated speed rpm	: 1225	
	+	
		ANEROID/ALTITUDE
Rated speed rpm	: 1083	- COMPENSATOR TEST
rack travel mm	: 12.10	_
	+	-
Rated speed rpm	: 1123	- SETTING
Tolerance 1/min	: <b>←</b> 5	
rack travel mm		Rated speed rpm : 500 - Pressure hPa : 1200 - rack travel mm : 14.50 - Tolerance mm : +- 0.10
	•	Pressure hPa : 1200
rack travel mm	: 0.85	rack travel mm · 1450
Tolerance mm	· + 0.55	Tolerance mm : +- 0.10
Rated speed rpm	1225	
water sheer thin	]	Pressure hPa
••••••••••••••••••••••••••••••••••••••		Pressure hPa : - Rated speed rpm : 500
LOUITNE		r kated speed rpm : 300
LOW IDLE	7	- rack travel mm : 8.90 - Tolerance mm : + 0.10
	7	- loterance mm : +- U.TU
	†	
control lever	<b>-</b> 0.0	MEASUREMENT
position degree	: 71.0	
tolerance degree	: +- 4.0	- Rated speed rpm : 500
Setting point w/	out bumper spring -	- Pressure hPa : 325
	-	rack travel mm : 10.70
Rated speed rpm	: 650 +	Tolerance mm : +- 0.20
rack travel mm	: 4.90	-
Tolerance mm	: +- 0.10	Pressure hPa : 550
	+	rack travel mm : 13.55
Testing:	-	rack travel mm : 13.55 Tolerance mm : +- 0.05
	4	-
Rated speed rpm	: 650	Start interlock
rack travel mm	5.40	-
rack travel mm Tolerance mm	: + 0.10	
rocci girec inni		
rack travel mm	: 2.00	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm		- The Desirent diminitor situation
Tolerance 1/min	÷ 30	Aneroid pressure
TO CET GIVE TANIII	]	· - '
Rated speed rpm	. 100	- hPa : - - Rated speed rpm : 500
varan shaan Lbu	. 100	nateu specu (piii • 200
CRT mm min.	. 10 50	Del. quantity cm3/1000 strokes : 77.0
יאו האות האות.	· / 17.3U *	
	1	Tolerance
TARALIE 222		cm3/1000 strokes : +- 2.0
TORQUE CONTROL	1	Check tolerance
		- cm3/1000s. : +- 4.5
Rated speed rpm	: 750	•
rack travel mm	: 14.50	-
Tolerance mm	: ← 0.10 <del> </del>	
	4	- STARTING FUEL DELIVERY
Rated speed rpm	: 1025	-
rack travel mm	: 12.80	- Rated speed rpm : 100
rack travel mm Tolerance mm	: +- 0.10	, , , , , , , , , , , , , , , , , , ,
·		

Del. quantity cm3/1000 strokes	:	200.0
Tolerance cm3/1000 strokes	: +	- 10.0

Check tolerance cm3/1000s. : + 13.0

## LOW IDLE

Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 23.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000 strokes : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.10.96 Test oil : 180 4113

Combination No. : 0 402 776 803

Injection pump

Pump designation : PES6P120A720LS7107

EP type number : 0 412 726 805

Governor

Governer design. : RSV35Q...750P0A520

Governer no. : 0 421 833 262

Cust. part No. :

Customer—spec. information Customer : MB-NFZ
Motor : 0M447 # : OM447 A Motor Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

bar : 208.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : 6-2-4-1-5-

Phasing : 0-60-120-180-240
Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 14.85 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 225.0

Tolerance cm3/1000 strokes : +- 1.0	+ Tolerance + cm3/1000 strokes : +- 1.0
	+ Check tolerance
Check tolerance cm3/1000s. : +- 4.0	+ cm3/1000s. : + 4.0 + Spreed
Spreed	+ Tolerance + cm3/1000 strokes : 5.0 + Check tolerance
Tolerance cm3/1000 strokes : 5.0	cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
	- control lever
Rated speed rpm : 350	+ position degree : 81.0 + tolerance degree : + 4.0
Rack travel in mm : 5.60 Tolerance mm : + 0.10	ASSEMBLY GOVERNOR SETTING
Del. quantity cm3/1000 strokes : 17.0	+ Rated speed rpm : 750
Tolerance	rack travel mm : 13.80
cm3/1000 strokes : + 3.0 Check tolerance	Rated speed rpm : 793
cm3/1000s. : +- 6.0 Spreed	Tolerance 1/min : +- 4 rack travel mm : 4.00
Tolerance	+
cm3/1000 strokes : 8.0 Check tolerance	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
cm3/1000s. : 12.0	Rated speed rpm : 850
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 751
WITH GOVERNOR	rack travel mm : 13.80
	Rated speed rpm : 794
GUIDE SLEEVE POSITION	Tolerance 1/min : + 4 rack travel mm : 4.00
	rack travel mm : 0.85
control lever position degree : - 3	+ Tolerance mm : + 0.55 + Rated speed rpm : 850
Rated speed rpm : 800	1
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Rated speed rpm : 752 rack travel mm : 13.80
governor spring	Rated speed rpm : 795
pre-tension click setting x : 2.75	+ Tolerance 1/min : + 4 + rack travel mm : 4.00
being accessing A . Larry	+
FULL LOAD DELIVERY AT FULL LOAD STOP	+ rack travel mm : 0.85 + Tolerance mm : + 0.55 + Rated speed rpm : 850
Rated speed rpm : 700	+
Aneroid pressure hPa : -	Rated speed rpm : 753
Del. quantity cm3/1000 strokes : 225.0	rack travel mm : 13.80
cm5/ luuu strokes : 225.U	T

H01

Rated speed rpm Tolerance 1/min rack travel mm		796 4 4.00	
rack travel mm Tolerance mm Rated speed rpm		0.85 0.55 850	
Rated speed rpm rack travel mm		754 13.80	
Rated speed rpm Tolerance 1/min rack travel mm	: : +- :	797 4 4.00	
rack travel mm Tolerance mm Rated speed rpm	: +-	0.85 0.55 850	
Rated speed rpm rack travel mm		755 13.80	
Rated speed rpm Tolerance 1/min rack travel mm		798 4 4.00	
rack travel mm Tolerance mm Rated speed rpm	: : +-	0.85 0.55 850	
LOW IDLE			
control lever position degree tolerance degree	: : +-	67.0 4.0	
Testing:			
Rated speed rpm rack travel mm Tolerance mm		350 5.60 0.10	
Rated speed rpm	:	100	
CRT mm min.	: >	19.50	
SET IDLE AUXILIAR	Y SPR	ING	
Rated speed rpm rack travel mm	:	100 2.00	
TORQUE CONTROL			
Rated speed rpm rack travel mm	•	700	

H02

Tolerance mm : + 0.05 Start interlock STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 240.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance : +- 14.0 cm3/1000s. LOW IDLE Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.12.96 Test oil : ISO 4113

Combination No. : 0 402 776 830

Injection pump

Pump designation : PES6P120A720RS7404 EP type number : 0 412 726 953

Gavernor

Governer design. : RSV400...1050POA547

: 12

Governer no. : 0 421 833 511

Cust. part No. : RE500079

Customer-spec. information

Customer : DEERE Motor : 6101 A : 6101 AF070 Power KW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance \*C

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Tolerance : 0-60-120-180-240

Check

tolerance \*NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : 7.50 Tolerance : + 0.50

Check

tolerance  $^{\circ}NW$  : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 14.00 Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm	: 1050	<pre>governor spring pre-tension click setting x : 3.50</pre>
Rack travel in mm Tolerance mm		FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes	: 214.0	Rated speed rpm : 1050 Aneroid pressure hPa : 2400
Tolerance cm3/1000 strokes	: + 1.0	Del. quantity cm3/1000 strokes : 214.0
Check tolerance cm3/1000s.	: +- 4.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Spreed		Spreed Tolerance
Tolerance cm3/1000 strokes	: 6.0	+ cm3/1000 strokes : 6.0 + Check tolerance + cm3/1000s. : 9.0
Check tolerance cm3/1000s.	: 9.0	+
		CONTROL LEVER
Rated speed rpm		control lever position degree : 95.0
Rack travel in mm Tolerance mm Del. quantity		tolerance degree : + 4.0  RATED SPEED
cm3/1000 strokes Tolerance		rack travel mm : 11.10 Rated speed rpm : 1115
cm3/1000 strokes Check tolerance		+ Tolerance 1/min : +- 5
cm3/1000s. Spreed Tolerance	: +- 5.0	+ rack travel mm : 4.00 + Rated speed rpm : 1175 + Tolerance 1/min : + 5
cm3/1000 strokes Check tolerance	: 8.0	reck travel mm : 0.85
cm3/1000s.	: 12.0	Tolerance mm : + 0.55 Rated speed rpm : 1230
(B) SETTING OF IN- WITH GOVERNOR	JECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 1180
GUIDE SLEEVE POST	TION	LOW IDLE
control lever position degree Rated speed rpm	: 800	control lever position degree : 73.0 tolerance degree : +- 4.0
Rack travel in mm Tolerance mm		Setting point w/out bumper spring
		Rated speed rpm : 400 rack travel mm : 5.00

Tolerance mm	: <b>←</b> 0.10	‡	Del. quantity cm3/1000 strokes	: 250.0
Testing:		+	Tolerance	
<u>-</u>		+	cm3/1000 strokes	: +- 3.0
Rated speed rpm rack travel mm Tolerance mm	: 400	+	Check tolerance cm3/1000s.	
rack travel mm	: 5.50	†	cm3/1000s.	: +- 6.0
ioterance mm	; <del>~</del> 0.10	†	Aneroid pressure	
Rated speed rpm	• 100	I	hPa	• -
mara apara i pin	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	Rated speed rpm	: 500
CRT mm min.	: > 19.00	+	Del. quantity	- <del></del>
	·	+	Del. quantity cm3/1000 strokes	: 121.0
			Tolerance	
TORQUE CONTROL		†	cm3/1000 strokes	
Dotted assed are-	. 1050	†	Check tolerance	
nack theyel me	: (UDU • 10 15	- 1	cm3/1000s.	; <del></del> 4.U
Rated speed rpm rack travel mm Tolerance mm	. 12.13 : +- 11.15	1		
		<b>▼</b>		<del></del>
Rated speed rpm	: 700		STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm	: 13.20	1		<del></del>
Tolerance mm	: +- 0.10	+	Rated speed rpm	: 100
		<del>;  </del>	rack travel mm	: 20.50
	**************************************	+	Tolerance mm	: <del>-</del> 0.50
ANEROID/ALTITUDE		†	Del. quantity	405.0
COMPENSATOR TEST		*	cm3/1000 strokes	: 105.0
		<b>†</b>	Tolerance	
SETTING		<u>†</u>	cm3/1000 strokes Check tolerance	: <del></del> 20.0
DE 1 1 TIAO		Ĩ	cm3/1000s.	· +- 25 N
Rated speed rpm	: 500	I	011D/ 10000.	
Pressure hPa	2400	1		
		+		
Pressure hPa Rated speed rpm	: -	+		
Rated speed rpm	: 500	+	LOW IDLE	
rack travel mm	: 9.40	+		100
Tolerance mm	: + 0.10	†	Rated speed rpm	: 400
ME A CLIDEMENT		†	Del. quantity	: 28.0
MEASUREMENT		<u></u>	cm3/1000 strokes Tolerance	. 20.0
Rated speed rpm	: 500	Ï	cm3/1000 strokes	· + 3 n
rated observe this	. , , , ,	I	Check tolerance	5.0
Pressure hPa	: 1580	1	cm3/1000s.	: <b>←</b> 5.0
ack travel mm		+	Spreed	- · ·
olerance mm	: <b>←</b> 0.05	+	Tolerance	
		+	cm3/1000 strokes	: 8.0
Pressure hPa	: 850	+	Check tolerance	40.0
rack travel mm	: 10.40	†	cm3/1000s.	: 12.0
Tolerance mm	: ← 0.20	†		
Start interlock		Ī		
orair intertock		I		
		1		
		<del></del>	End of test speci	fication sheet
FUEL DELIVERY CHA	ARACTERISTICS	Ì	,-	
Aneroid pressure		1		
hPa	: 24 <b>00</b>	+		
Rated speed rpm		+		
, , , , ,		+		

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.12.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 776 831

Injection pump

Pump designation : PES6P120A720RS7404 EP type number : 0 412 726 953

Governor

Governer design. : RSV400...1050P0A547

: 13

Governer no. : 0 421 833 512

Cust. part No. : RE500081

Customer-spec. information

Customer : DEERE Motor : 6101 A : 6101 AF010 Power KW

: 242.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

H06

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : **←** 0.75

Start of delivery mark

\*NW after s.o.d. : 8.00 Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

: 14.00 travel Difference \* CS : 2.50

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 13.15 Tolerance mm: +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1050
Del. quantity cm3/1000 strokes : 231.0	Aneroid pressure hPa : 2600 Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 231.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : - 4.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
Spreed	Tolerance
Tolerance cm3/1000 strokes : 6.0	cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000S. : 9.0	
<del></del> ‡	CONTROL LEVER
+	control lever
Rated speed rpm : 400	position degree : 98.0
	tolerance degree : +- 4.0
Rack travel in mm: 6.00	10101 and a a a great and a second a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second a second a second and a second a second a second a s
Tolerance mm : + 0.10 +	RATED SPEED
Del. quantity	rack travel mm : 12.10
	Rated speed rpm : 1110
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 3.0 +	
Check tolerance +	rack travel mm : 4.00
cm3/1000s. : $\leftarrow$ 5.0 $+$	Rated speed rpm : 1185
Spreed	Tolerance 1/min : + 5
Tolerance +	
cm3/1000 strokes : 8.0	rack travel mm : 0.85
Check tolerance +	Tolerance mm : +- 0.55
cm3/1000s. : 12.0	Rated speed rpm : 1270
12.0	Nated Speed (pill : 1210
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1195
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : - 3	
Rated speed rpm : 800 +	tolerance degree : +- 4.0
Donal Annual In the Co.	Catalan unitat/at b
Rack travel in mm: 0.50 +	Setting point w/out bumper spring
Tolerance mm : + 0.20 +	
+	Rated speed rpm : 400_
governor spring +	rack travel mm : 5.50
pre-tension +	Tolerance mm : +- 0.10
click setting x : 4.25	
<u>-</u>	Testing:
•	<del></del>

400 Rated speed rpm rack travel mm 6.00 Tolerance mm : + 0.10Rated speed rpm 100 : > 19.00 CRT man min. TORQUE CONTROL 1050 Rated speed rpm 13.15 rack travel mm : +- 0.05 Tolerance mm 700 Rated speed rpm rack travel mm 13.95 : +- 0,10 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 2600 Pressure hPa 500 Rated speed rpm : rack travel mm 9.80 : +- 0.20 Tolerance mm **MEASUREMENT** Rated speed rpm 500 Pressure hPa 1750 12.90 rack travel mm Tolerance mm : +- 0.05 Pressure hPa 925 rack travel mm 10.80 : +- 0.20 Tolerance mm Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure

Check tolerance cm3/1000s.: +- 6.0 Aneroid pressure hPa Rated speed rpm 500 Del. quantity cm3/1000 strokes : 118.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s.4.0 : +--STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm 21.00 : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : + 20.0Check tolerance cm3/1000s.: +- 25.0 LOW IDLE Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 28.5 Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s.5.0 : +--Spreed Tolerance cm3/1000 strokes : 8.0

End of test specification sheet

12.0

Check tolerance

cm3/1000s.

hPa : 2600 Rated speed rpm : 700 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

267.5

**80H** 

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.01.97 Test oil : ISO 4113

Combination No. : 0 400 876 295

Injection pump

Pump designation : PES6A90D410RS2596 EP type number : 0 410 896 073

Governor

Governer design. : RSV750...1250A1C618

: 1L

Governer no. : 0 420 232 513

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : 0M352 Power KW : 119.0

### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. \*C : 40 Tolerance \*C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

H09

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

## BASIC SETTING

Del. quantity cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : +- 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 4.5

Rated speed rpm : 750

Rack travel in mm : 7.10
Tolerance mm : +- 0.10
Del. quantity

cm3/1000 strokes : 12.0 Tolerance

cm3/1000 strokes : + 3.0

Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0  (B) SETTING OF INJECTION PUMP	rack travel mm Tolerance mm Rated speed rpm Rated speed rpm rack travel mm Rated speed rpm Tolerance 1/min	: 1445 : 1251 : 12.20 : 1281
GUIDE SLEEVE POSITION	rack travel mm rack travel mm Tolerance mm Rated speed rpm	: 4.00 : 1.00 : +- 0.70
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.65	Rated speed rpm rack travel mm  Rated speed rpm Tolerance 1/min	: 12.20 : 1282
Tolerance mm : + 0.35  FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm rack travel mm Tolerance mm	: 4.00 : 1.00 : + 0.70
Rated speed rpm : 1230 Aneroid pressure hPa : - Del. quantity	Rated speed rpm Rated speed rpm rack travel mm	: 1253
cm3/1000 strokes : 78.0 Tolerance cm3/1000 strokes : \( \infty \) 0.5 Check tolerance cm3/1000s. : \( \infty \) 2.5	Rated speed rpm Tolerance 1/min rack travel mm	: 1283 : +- 6
Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	rack travel mm Tolerance mm Rated speed rpm	: 1.00 : + 0.70 : 1445
cm3/1000s. : 4.5	Rated speed rpm rack travel mm	: 1254 : 12.20
control lever position degree : 109.0	Rated speed rpm Tolerance 1/min rack travel mm	: +- 6
tolerance degree : +- 4.0  ASSEMBLY GOVERNOR SETTING	rack travel mm Tolerance mm Rated speed rpm	: +- 0.70
Rated speed rpm : 1250 rack travel mm : 12.20	Rated speed rpm rack travel mm	
Rated speed rpm : 1280 Tolerance 1/min : + 6 rack travel mm : 4.00	Rated speed rpm Tolerance 1/min rack travel mm	: +- 6

rack travel mm : 1.00 Tolerance mm : ← 0.70 1445 Rated speed rpm :

### LOW IDLE

control lever

position degree : 86.0 tolerance degree : +- 4.0

## Testing:

Rated speed rpm : 750 rack travel mm : 7.10 : +- 0.10 Tolerance mm

2.00 reck travel mm : Rated speed rpm : 780
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

Start interlock

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 16.80 Tolerance mm : + 0.20 Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  5.0 Check tolerance

cm3/1000s. : +- 8.0

#### LOW IDLE

Rated speed rpm : 750 Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 5.0

Spreed

Tolerance cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. : 4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.01.97 Edition Test oil : ISO 4113

Combination No. : 0 400 876 311

Injection pump

Pump designation : PES6A90D410RS2569 EP type number : 0 410 896 071

Governor

Governer design. : RSV350...1250A0C1130

: -1L

: 0 420 232 427 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 352 : 92.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar : **←** 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : **←** 0.50

Check

tolerance \*NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.55 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 57.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s.

: **←** 2.5

Spreed

Tolerance

cm3/1000 strokes :

3.0

Check tolerance

cm3/1000s.

4.5

Rated speed rpm : 350

H12

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1550 Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes :  $\leftarrow$  1.0 rack travel mm : 4.00 Rated speed rpm : 1425 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 4.5 LOW IDLE Setting point w/out bumper spring (B) SETTING OF INJECTION PUMP Rated speed rpm : 350 rack travel mm : 8.40 Tolerance mm : + 0.10 WITH GOVERNOR GUIDE SLEEVE POSITION Testina: rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : + 30 control lever position degree : -3
Rated speed rpm : 800 Rated speed rpm : 100 Rack travel in mm: 0.65 Tolerance mm : + 0.35 CRT mm min. : > 19.00 governor spring pre-tension TORQUE CONTROL click setting x: 5.25 Rated speed rpm : 1250 rack travel mm : 11.55 Tolerance mm : + 0.05 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 600 rack travel mm : 11.95 Rated speed rpm : 1250 Aneroid pressure Tolerance mm :  $\leftarrow$  0.05 hPa Del. quantity cm3/1000 strokes : 67.5 Rated speed rpm : 1050 rack travel mm : 11.60 Tolerance mm : +- 0.10 Tolerance cm3/1000 strong Check tolerance -/4000s : +- 2.5 Start interlock Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.5 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm : 600 CONTROL LEVER Del. quantity cm3/1000 strokes : 57.0 control lever position degree : 113.0 Tolerance tolerance degree : +- 4.0 cm3/1000 strokes : +- 1.0Check tolerance : +- 3.5 RATED SPEED cm3/1000s.

Aneroid pressure

850 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.5

## STARTING FUEL DELIVERY

100 Rated speed rpm rack travel mm : 16.30 : **←** 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  5.0

Check tolerance

cm3/1000s.: +- 8.0

## LOW IDLE

350 Rated speed rpm : Del. quantity cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

4.5 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 30.12.96 : ISO 4113

Combination No. : 0 403 466 151

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governer design. : RSV450...1100MW2A367 Governer no. : 0 420 085 250

Cust. part No. : 3926877

Customer-spec. information

Customer : CDC

Motor

: 6 CT

Power KW

: 138.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

H15

x inside diameter: 2.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

17.0 Test pressure bar : Tolerance bar : ← 1.0

Prestroke mm

: 2.80

Tolerance mm

: **←** 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

\*NW after s.o.d. : 3.00

Tolerance

: +- 0.50

Check

tolerance \*NW

: **←** 0.75

Barrel no.

: 1

Beginning of delivery differende

and maximum rack

travel

15.00

Difference \* CS : 2.00

BASIC SETTING

Rated speed rpm : 1100	
Rack travel in mm: 10.80 Tolerance mm: +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure
Del. quantity cm3/1000 strokes : 130.0	hPa : 1200  Del. quantity  cm3/1000 strokes : 130.0
Tolerance cm3/1000 strokes : + 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000s. : +- 4.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
Rated speed rpm : 450	<pre>control lever position degree : 94.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 5.40	RATED SPEED
Tolerance mm : + 0.10 + Del. quantity	rack travel mm : 9.80 Rated speed rpm : 1165
cm3/1000 strokes : 24.5	Tolerance 1/min : + 5
cm3/1000 strakes : + 2.0	rack travel num : 5.40
Check tolerance cm3/1000s. : +- 4.5	Rated speed rpm : 1230 Tolerance 1/min : +- 5
Spreed +	rack travel mm : 1.00
cm3/1000 strokes : 3.5 + Check tolerance +	Tolerance mm : +- 0.70 Rated speed rpm : 1350
cm3/1000s. : 5.5	rack travel mm : 6.40
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1230
WITH GOVERNOR	
GUIDE SLEEVE POSITION	LOW IDLE
Ţ.,	control lever
control lever + position degree : - 3 +	position degree : 78.0 tolerance degree : +- 4.0
Rated speed rpm : 800	Control lever difference
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Grad : 16.0 tolerance degree : +- 4.0
governor spring	Setting point w/out bumper spring
pre-tension click setting x : 3.00	Rated speed rpm : 450
H16	

rack travel mm Tolerance mm	: 4.90 : +- 0.10	+
Testing:		‡
Rated speed rpm	: 450	‡
rack travel mm	: 5.40	+
Tolerance mm	: 5.40 : +- 0.10	+
Rated speed rpm	: 100	‡
CRT mm min.	: > 19.00	Ī
TORQUE CONTROL		+
Rated speed rpm	: 1190	• ‡
rack travel mm	: 10.80	+
Tolerance mm	: <b>←</b> 0.05	+
Rated speed rpm	: 750	‡
rack travel mm	: 11.35 : +- 0.10	+
Tolerance mm	: +- 0.10	+
Rated speed rpm	: 1000	1
rack travel mm	: 11.15	+
Tolerance mm	: <b>←</b> 0.20	+
		. ‡
ANEROID/ALTITUDE		+
COMPENSATOR TEST		+
		t
SETTING		T
		†
	: 500	†
Rated speed rpm	: 500 : 1200	†
Rated speed rpm Pressure hPa	· · · · · · · · · · · · · · · · · · ·	† † † †
Rated speed rpm Pressure hPa Pressure hPa	: 1200 : – : 500	† † † †
Rated speed rpm Pressure hPa Pressure hPa	: 1200 : – : 500 : 10.50	+++++++++
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm	: 1200 : – : 500	++++++++
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1200 : – : 500 : 10.50	+++++++++++++
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1200 : – : 500 : 10.50	<del>+++++++++++++++++++++++++++++++++++++</del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa	: 1200 : - : 500 : 10.50 : +- 0.20 : 500 : 550	<del>+++++++++++++++++++++++++++++++++++++</del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90	<del>+++++++++++++++++++++++++++++++++++++</del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm	: 1200 : - : 500 : 10.50 : +- 0.20 : 500 : 550	<del>+++++++++++++++++++++++++++++++++++++</del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90	<del>+++++++++++++++++++++++++++++++++++++</del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm Start interlock	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90 : + 0.20	<del>+++++++++++++++++++++++++++++++++++++</del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm Start interlock	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90 : + 0.20	<del>+ + + + + + + + + + + + + + + + + + + </del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm Start interlock	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90 : + 0.20	<del>+ + + + + + + + + + + + + + + + + + + </del>
Rated speed rpm Pressure hPa Pressure hPa Rated speed rpm rack travel mm Tolerance mm  MEASUREMENT Rated speed rpm Pressure hPa rack travel mm Tolerance mm Start interlock	: 1200 : - : 500 : 10.50 : + 0.20 : 500 : 550 : 10.90 : + 0.20	+++++++++++++++++++++++++++++++++++++++

Del. quantity cm3/1000 strokes	: 140.0
Tolerance	
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/10006. Spreed	: <del>+</del> 5.0
Tolerance cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000s.	: 9.0
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes	: 121.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: <del></del> 3.0
CTARTING FUEL ACI	TUEDV
STARTING FUEL DEL	
Rated speed rpm rack travel mm	: 100 : 20.50
Tolerance mm Del. quantity	: +- 1.00
cm3/1000 strokes	: 177.0
Tolerance cm3/1000 strokes	: + 10.0
Check tolerance cm3/1000s.	: +- 13.0
LOW IDLE	
Rated speed rpm	: 450
Del. quantity cm3/1000 strokes	: 24.5
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5
	<del></del>

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.12.96 Edition : ISO 4113 Test oil

Combination No. : 0 403 466 153

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 405 237

Governor

Governer design. : RSV425...1100MW2A369

Governer no. : 0 420 085 252

Cust. part No. : 3930123

Customer-spec. information Customer : CDC Motor : 6 CT Power KW : 154.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

H18

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

rnasing : 0-60-120-180-240
Tolerance : + 0.50

Check

tolerance \*NW : **←** 0.75

Start of delivery blocking

"NW after s.o.d. : 8.00 Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00 Difference \* CS : 2.00

BASIC SETTING

Rated speed rpm : 1100	
Rack travel in mm : 11.55 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 138.5	Aneroid pressure hPa : 1200 Del. quantity
Tolerance	cm3/1000 strokes : 138.5 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000S. : +- 4.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0 Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance cm3/10005. : 7.5	CONTROL LEVER
Rated speed rpm : 425	control lever position degree : 103.0 tolerance degree : +- 4.0
Rack travel in mm: 5.30	RATED SPEED
Tolerance mm : + 0.10 + 0.10 cm3/1000 strokes : 22.5	rack travel mm : 10.50 Rated speed rpm : 1190 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : + 2.0 Check tolerance	rack travel mm : 4.50 Rated speed rpm : 1265
<pre>cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 3.5</pre>	Tolerance 1/min : +- 5  rack travel mm : 1.00
cm3/1000 strokes : 3.5 + Check tolerance cm3/1000s. : 5.5 + cm3/1000s.	Tolerance mm : +- 0.70 Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.50 Rated speed rpm : 1265
	LOW IDLE
GUIDE SLEEVE POSITION	
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 79.0 tolerance degree : + 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Control lever difference Grad : 24.0 tolerance degree : + 4.0
governor spring pre-tension	Setting point w/out bumper spring
click setting x : 4.75	Rated speed rpm : 425

H19

rack travel mm Tolerance mm	: 4.80 : + 0.10	+ Del. quantity + cm3/1000 strokes	:
Testing:		+ Tolerance + cm3/1000 strokes	: +
~	401	+ Check tolerance	
Rated speed rpm	: 425	+ cm3/1000s.	: +
rack travel mm Tolerance mm	: 5.30 : + 0.10	+ Spreed + Tolerance	
IOCETERICE IMM	. — 0.10	cm3/1000 strokes	
Rated speed rpm	: 100	Check tolerance	•
		+ cm3/1000s.	:
CRT mm min.	: > 19.00	+	
		+ Aneroid pressure	
TARRUE ANTERNI	<del></del>	+ hPa	:
TORQUE CONTROL		Rated speed rpm	:
Rated speed rpm	• 1400	+ Del. quantity + cm3/1000 strokes	:
rack travel mm	: 11.55	+ Tolerance	•
Tolerance mm		+ cm3/1000 strokes	: +
		+ Check tolerance	-
Rated speed rpm rack travel mm Tolerance mm	: 750	+ cm3/1000s.	: +
rack travel mm	12.50	†	
iolerance mm	: +- 0.70	<b>†</b>	
		STARTING FUEL DEL	IVFP'
ANEROID/ALTITUDE		+ STANIZAG TOLL DEL	- v - IX
COMPENSATOR TEST		+ Rated speed rpm	:
		+ rack travel mm	:
		+ Tolerance mm	: +
SETTING		+ Del. quantity	
Dahad award mm	: 500	+ cm3/1000 strokes + Tolerance	:
Rated speed rpm Pressure hPa	: 500 : 1200	cm3/1000 strokes	• 4
ricasure in a	. 1200	+ Check tolerance	• '
Pressure hPa	: -	+ cm3/1000s.	: +
Rated speed rpm	: 500	+	
rack travel mm		<del>†</del>	
Tolerance mm	: +- 0.20	<u> </u>	
MEASUREMENT		LOW IDLE	
Rated speed rpm	: 500	Rated speed rpm	:
•		→ Del. quantity	
Pressure hPa	: 830	+ cm3/1000 strokes	:
rack travel mm	: 11.85 : +- 0.20	+ Tolerance + cm3/1000 strokes	
Tolerance mm	0.20	+ Cm3/1000 strokes + Check tolerance	. •
Pressure hPa	: 630	- cm3/1000s.	: +
rack travel mm	: 11.10	Spreed	-
Tolerance mm	: +- 0.20	+ Tolerance	
		+ cm3/1000 strokes	:
Start interlock		+ Check tolerance + cm3/1000s.	•
		T cm3/10003.	•
	RACTERISTICS	<del></del> ‡	
FUEL DELIVERY CHA	MO I BILLO I TOO		
FUEL DELIVERY CHAP	THE PERIOD TEC		
FUEL DELIVERY CHAI Aneroid pressure hPa	: 1200	End of test speci	fice

H20

: 425 : 22.5 : +- 2.0 : +- 4.5 : 3.5 : 5.5 specification sheet

: 156.5

: +- 2.0

: +- 5.0

: 6.0

: 9.0

: -: 500

: 124.5

: **←** 1.0

: +- 3.0

: 100 : 20.50 : + 1.00

: 177.0

: +- 10.0

: +- 13.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 31.12.96 Edition Test oil : iso 4113

Combination No. : 0 403 456 154

Injection pump

Pump designation : PES6MW100/120RS1238

EF type number : 0 413 406 237

Governor

Governer design. : RSV500...1100MW2A370

Governer no. : 0 420 085 253

Cust. part No. : 3926880

Customer-spec. information Customer : CDC : 6 CT Motor : 154.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

H21

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

: 2.80 Prestroke mm : + 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 : + 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.00 : + 0.50 Tolerance

Check

: +- 0.75 tolerance \*NW

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

15.00 travel Difference \* CS : 2.00

Rated speed rpm : 1100	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 11.60 + Tolerance mm: + 0.05 +	Rated speed rpm : 1100
	Aneroid pressure
Del. quantity cm3/1000 strokes : 139.0	Del. quantity
Tolerance	cm3/1000 strokes : 139.0 Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : + 4.0	Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0
Tolerance	Check tolerance cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	. , , , ,
Check tolerance	
cm3/1000s. : 7.5	CONTROL LEVER
	control lever
Rated speed rpm : 500	position degreé : 108.0 tolerance degree : +- 4.0
+	•
Rack travel in mm: 5.25 + Tolerance mm: + 0.10	RATED SPEED rack travel mm : 10.60
Del. quantity	Rated speed rpm : 1165
cm3/1000 strokes : 22.5	Tolerance 1/min : + 5
Tolerance + 2.0	rack travel mm : 5.90
Check tolerance	Rated speed rpm : 1230
cm3/1000s. : + 4.5	4.00
Spreed + Tolerance +	rack travel mm : 1.00 Tolerance mm : +- 0.70
cm3/1000 strokes : 3.5	Rated speed rom : 1400
Check tolerance	
cm3/1000s. : 5.5	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	
Ţ	control lever
	position degree : 87.5
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
+	Control lever difference
control lever + position degree : - 3	Grad : 20.5 tolerance degree : +- 4.0
Rated speed rpm : 800	_
Rack travel in mm: 0.50	Setting point w/out bumper spring
Tolerance mm : + 0.20	Rated speed rpm : 500
<del> </del>	rack travel mm : 4.75
governor spring + pre-tension +	Tolerance mm : +- 0.10
click setting x : 3.75	Testing:
•	

Rated speed rpm rack travel mm Tolerance mm	: 500 : 5.25 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.60 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.50 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1200
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 850 : 11.90 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 590 : 10.90 : + 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 750
cm3/1000 strokes Tolerance	
cm3/1000 strokes	: +- 2.0

Check tolerance cm3/1000s. Spreed	:	+	5.0
Tolerance cm3/1000 strokes	:		6.0
Check tolerance cm3/1000s.	:		9.0
Aneroid pressure	•		
hPa	:		_
Rated speed rpm	:		500
Del. quantity cm3/1000 strokes	:		117.0
Tolerance cm3/1000 strokes	•	+-	1.0
Check tolerance	•		
cm3/1000s.	٠	-1	3.0
STARTING FUEL DEL	IV	ERY	
Rated speed rpm	:		100

Rated speed rpm	:		100
rack travel mm	:		20.50
Tolerance mm	:	+	1.00
Del. quantity			
cm3/1000 strokes	:		177.0
Tolerance			
cm3/1000 strokes	:	+-	10.0
Check tolerance			
cm3/1000s.	:	+-	13.0

LOW IDLE			
Rated speed rpm Del. quantity	• •	500	
cm3/1000 strokes Tolerance	:	22.5	
cm3/1000 strokés Check tolerance	: +-	2.0	
cm3/1000s.	: +-	4.5	
Spreed Tolerance		7.5	
cm3/1000 strokes Check tolerance	:	3.5	
cm3/1000s.	:	5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

tartion : 31.12.96 Test oil : ISO 4113

Combination No. : 0 403 466 155

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governer design. : RSV425...1190MW2A371

Governer no. : 0 420 085 254

Cust. part No. : 3930124

Customer-spec. information

Customer : CDC

Motor

: 6 CT

Power KW

: 130.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

bar

Opening pressure

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

H24

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.25 : **←** 0.50 Tolerance

Check

: **←** 0.75 tolerance \*NW

Barrel no.

: 1

Beginning of delivery differende

and maximum rack

travel

Difference \* CS : 2.00

15.00

Rated speed rpm : 1190	<pre>governor spring pre-tension click setting x : 3.75</pre>
0.05	+
Rack travel in mm: 9.95	FIRE LOAD DELTHERY AT CHILL LOAD STOD
Tolerance mm : +- 0.05	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 119.0	Rated speed rpm : 1190 Aneroid pressure
	+ hPa : 900
Tolerance cm3/1000 strokes : +- 1.0	+ Del. quantity + cm3/1000 strokes : 119.0 + Tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000 strokes : +- 1.0 + Check tolerance
Spreed	+ cm3/1000s. : +- 4.0 + Spreed + Tolerance
Tolerance	+ cm3/1000 strokes : 4.0
cm3/1000 strokes : 4.0	Check tolerance
	+ cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	+
	CONTROL LEVER
Rated speed rpm : 440	control lever position degree : 106.0
Rack travel in mm: 5.20	tolerance degree : +- 4.0
Tolerance mm : + 0.10	- total wilde degree
Del. quantity	+ RATED SPEED
cm3/1000 strokes : 24.5	+ rack travel mm : 8.90
Tolerance	+ Rated speed rpm : 1270
cm3/1000 strokes : +- 2.0 Check tolerance	† Tolerance 1/min : + 5
cm3/1000s. : +- 4.5	rack travel mm : 4.50
Spreed	+ Rated speed rpm : 1330
Tolerance	+ Tolerance 1/min : + 5
cm3/1000 strokes : 3.5	+
Check tolerance	+ rack travel mm : 1.00
cm3/1000s. : 5.5	Tolerance mm : + 0.70 Rated speed rpm : 1400
	T Rated speed right: 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.50 Rated speed rpm : 1330
	+
GUIDE SLEEVE POSITION	I
GOIDE SEELVE / OSITION	LOW IDLE
	+
control lever	+
position degree : - 3	+ control lever
Rated speed rpm : 800	position degree : 85.0
Rack travel in mm : 0.50	tolerance degree : +- 4.0
Tolerance mm : +- 0.20	Control lever difference
10 to 1 de 11 mm	+ Grad : 21.0
	tolerance degree : + 4.0
	1

Setting point w/o	, -
Rated speed rpm rack travel mm Tolerance mm	
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 440 : 5.20 : + 0.10
Rated speed rpm	
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1190 : 9.95 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 10.30 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 900
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.05 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 550 : 10.20 : + 0.05
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 900 : 750

Del. quantity			
cm3/1000 strokes	:	125.0	
Tolerance		2.0	
cm3/1000 strokes	: +-	2.0	
Check tolerance cm3/1000s.	: +-	5.0	
Spreed		ال. ت	
Tolerance			
cm3/1000 strokes	:	6.0	
Check tolerance			
cm3/1000s.	:	9.0	
Aneroid pressure			
hPa	:	-	
Rated speed rpm	:	500	
Del. quantity cm3/1000 strokes	•	115.5	
Tolerance	•	113.5	
cm3/1000 strokes	: +-	1.0	
Check tolerance	•		
cm3/1000s.	: +-	3.0	
STARTING FUEL DEL	TUEDY		
STARTING FUEL DEL	T VIER :		
Rated speed rpm	:	100	
rack travel mm	:	20.50	
Tolerance mm	: +-	1.00	
Del. quantity			
cm3/1000 strokes	:	177.0	
Tolerance		40.0	
cm3/1000 strokes	: +-	10.0	
Check tolerance cm3/1000s.		13.0	
CIID/ TUUUS:	, +-	12.0	
LOW IDLE			
Dahad and all and	_	//0	
Rated speed rpm Del. quantity	:	440	
cm3/1000 strokes	•	24.5	
Tolerance	•	C +	
cm3/1000 strokes	: +-	2.0	
Check tolerance			
cm3/1000s.	: +-	4.5	
Spreed			
Tolerance		7 5	
cm3/1000 strokes Check tolerance	:	3.5	
cm3/1000s.	•	5.5	
	•	٠.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31.12.96 : ISO 4113

Combination No. : 0 403 466 157

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governer design. : RSV500...1100MW2A375

Governer no. : 0 420 085 258

Cust. part No. : 3929172

Customer-spec. information Customer : CDC Motor : 6 CTA Power KW : 171.5

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x length mm : 600

2.0

x inside diameter :

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm 3.55 : +- 0.05 Tolerance mm Check

tolerance mm : **←** 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50 Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

15.00 travel Difference \* CS : 1.50

Rated speed rpm : 1100	<u> </u>
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 12.45	†
Tolerance mm : + 0.05	Rated speed rpm : 1100
No.	+ Aneroid pressure
Del. quantity cm3/1000 strokes : 151.5	+ hPa : 1200
cm3/1000 strokes : 151.5	+ Del. quantity + cm3/1000 strokes : 151.5
Tolerance	Tolerance
cm3/1000 strokes : +- 1.0	- m3/1000 strokes : +- 1.0
1.0	+ Check tolerance
Check tolerance	
cm3/1000s. : +- 4.0	+ Spreed
	+ Tolerance
Spreed	+ cm3/1000 strokes : 4.0
,	+ Check tolerance
Tolerance	+ cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	+
	<u> </u>
Check tolerance	
cm3/1000s. : 7.5	CONTROL LEVER
	+
	position degree : 110.0
Rated speed rpm : 500	tolerance degree : +- 4.0
·	+
Rack travel in mm : 5.00	+ RATED SPEED
Tolerance mm : + 0.10	+ rack travel mm : 11.40
Del. quantity	+ Rated speed rpm : 1160
cm3/1600 strokes : 21.5	+ Tolerance 1/min : + 5
Tolerance	+
cm3/1000 strokes : +- 2.0	† rack travel mm : 6.30
Check tolerance	+ Rated speed rpm ; 1230
cm3/1000s. : +- 4.5	† Tolerance 1/min : + 5
Spreed	†
Tolerance	† rack travel mm : 1.00
cm3/1000 strokes : 3.5	† Tolerance mm : + 0.70
Check tolerance	+ Rated speed rpm : 1325
cm3/1000s. : 5.5	+
	rack travel mm : 6.30 Rated speed rpm : 1230
45.	† Rated speed rpm : 1230
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	†
	†
	IOUTOUR
GUIDE SLEEVE POSITION	† LOW IDLE
GOIDE STEENE LOSTITON	Ī
	T control lever
control lever	position degree : 88.0
position degree : - 3	tolerance degree : +- 4.0
Rated speed rpm : 800	T total dille degree : - 4.0
nateu specu (pii) . OUU	T Control lever difference
Rack travel in mm : 0.50	+ Grad : 22.0
Tolerance mm : +- 0.20	tolerance degree : +- 4.0
TO CE TOTAL TO THE	T cotterance degree : ** 4.0
governor spring	Setting point w/out bumper spring
pre-tension	- second bottle wrone pumper shi mg
click setting x : 4.50	Rated speed rpm : 500
ceick secenty x . 4.30	I wrea speed this

rack travel mm Tolerance mm	: 4.50 : + 0.10	†	Del. quantity cm3/1000 strokes	: 167.5
Testing:		Ī	Tolerance cm3/1000 strokes	: <b>←</b> 2.0
Rated speed rpm rack travel mm Tolerance mm	: 500 : 5.00	+ + + + + + + + + + + + + + + + + + +	Check tolerance cm3/1000s. Spreed	: +- 5.0
		+ +	Tolerance cm3/1000 strokes	
Rated speed rpm		‡	Check tolerance cm3/1000S.	: 9.0
CRT mm min.	: > 19.00	‡	Aneroid pressure	
TORQUE CONTROL		İ	hPa Rated speed rpm Del. quantity	
Rated speed rpm	: 1100	7	cm3/1000 strokes Tolerance	: 119.5
rack travel mm Tolerance mm	: + 0.05	Ţ	cm3/1000 strokes	
Rated speed rpm rack travel mm	: 750 : 13.40	‡	Check tolerance cm3/1000s.	: +- 3.0
rack travel mm Tolerance mm	: <b>←</b> 0.10	‡		
ANEROID/ALTITUDE		<del></del>	STARTING FUEL DEL	IVERY
COMPENSATOR TEST		-	Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.50
SETTING		† I	Tolerance mm Del. quantity cm3/1000 strokes	
Rated speed rpm Pressure hPa	: 500 : 1200	† † † † †	Tolerance cm3/1000 strokes	: +- 10.0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.50 : + 0.20	† †	Check tolerance cm3/1000s.	
MEASUREMENT		‡	LOW IDLE	
Rated speed rpm	: 500	+	Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 790 : 12.20 : ← 0.20	‡	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	
		<del>-</del>	Check tolerance	
Pressure hPa rack travel mm Tolerance mm	: 620 : 11.30 : +- 0.20	‡	cm3/1000s. Spreed Tolerance	: +- 4.5
Start interlock		+	cm3/1000 strokes Check tolerance	
		‡	cm3/1000s.	: 5.5
FUEL DELIVERY CHA	ARACTERISTICS	‡		
Aneroid pressure hPa	: 1200	‡	End of test speci	fication sheet
Rated speed rpm	: 750	+		

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.12.96 Test oil : ISO 4113

Combination No. : 0 403 466 158

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governer design. : RSV425...1100MW2A376

Governer no. : 0 420 085 259

Cust. part No. : 3929837

Customer—spec. information Customer : CDC Motor : 6 CTA-A Power KW : 172.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

90

x inside diameter : 2.0
x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-130-240

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50 Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00 Difference \* CS : 1.50

BASIC SETTING

Rated speed rpm	: 1100	
		FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 12.75	
Tolerance mm	: +- 0.05 +	Rated speed rpm : 1100
	+	Aneroid pressure
Del. quantity	t	hPa : 900
cm3/1000 strokes	: 144.0 +	Del. quantity
<b>T</b> -lamana	<del></del>	cm3/1000 strokes : 144.0
Tolerance cm3/1000 strokes	: + 1.0	Tolerance cm3/1000 strokes : + 1.0
CIRD/ TOUU SCPOKES	• • • • • • • • • • • • • • • • • • • •	Check tolerance
Check tolerance	I	cm3/1000s. : +- 4.0
cm3/1000s.	: +- 4.0	Spreed 4.0
	1	Tolerance
Spreed		cm3/1000 strokes : 4.0
<b>€</b> 1 = = ==	· 1	Check tolerance
Tolerance	1	cm3/1000s. : 7.5
cm3/1000 strokes	: 4.0	
Check tolerance	+	
cm3/1000s.	: 7.5	CONTROL LEVER
	+	
	+	control lever
	+	position degree : 97.0
Rated speed rpm	: 435	tolerance degree : +- 4.0
	t	DATES ODEES
Rack travel in mm		RATED SPEED
	: + 0.10	rack travel mm : 11.70
Del. quantity	. 225	Rated speed rpm : 1165
cm3/1000 strokes	: 22.5	Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes	20 †	rack travel mm : 6.50
Check tolerance	2.0	Rated speed rpm : 1230
cm3/1000s.	: ← 4.5 I	Tolerance 1/min : +- 5
Spreed		TO COT ON TO COT OF THE PARTY O
Tolerance	1	rack travel mm : 1.00
cm3/1000 strokes	: 3.5	Tolerance mm : +- 0.70
Check tolerance	1	Rated speed rpm : 1325
cm3/1000s.	: 5.5	
	4	rack travel mm : 6.50
	<del>}</del>	rack travel mm : 6.50 Rated speed rpm : 1230
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	
	+	
	<b>T</b>	LOW IDLE
GUIDE SLEEVE POSIT	TON	
	Ĭ	control lever
control lever	I	position degree : 74.0
position degree	: - 3	tolerance degree : +- 4.0
Rated speed rpm		The second secon
John . Ibili	1	Control lever difference
Rack travel in mm	: 0.50	Grad : 23.0
Tolerance mm		tolerance degree : +- 4.0
	†	Catting paint/aut burner
governor spring	†	Setting point w/out bumper spring
pre-tension	. 375	Pated speed row . 1.75
click setting x	. 3.73	Rated speed rpm : 435

rack travel mma Tolerance mm	: 5.70 : ← 0.10
Testing:	
Rated speed rpm rack travel mma Tolerance mm	
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.75 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 900
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 12.05 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 600 : 12.20 : + 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 133.0
Tolerance	
cm3/1000 strokes Check tolerance	: <del></del> 1.0
cm3/1000s.	: <b>←</b> 3.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm		20.50
Tolerance mm	: +-	1.00
Del. quantity		
cm3/1000 strokes	:	145.5
Tolerance		
cm3/1000 strokes	: +-	10.0
Check tolerance		
cm3/1000s.	: +	13.0

# LOW IDLE

:	435
:	22.5
: +-	2.0
: +-	4.5
:	3.5
:	5.5
	: : + : +

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31.12.96 : ISO 4113

Combination No. : 0 403 466 159

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

@wernor

Governer design. : RSV550...1100MW2A377

Governer no.

: C 420 085 260

Cust. part No.

: 3927117

Customer-spec. information : CDC Customer Motor : 6 CTA

Power KW

: 171.5

# TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

Tolerance bar

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 har Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

J05

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : - 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50

Tolerance : +- 0.50

Check

tolerance \*NW : <del>←</del> 0.75

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

15.00 Difference \* CS : 1.50

Rated speed rpm : 1100 +	
Rack travel in mm: 12.45	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.05	Rated speed rpm : 1100 Aneroid pressure
Del. quantity cm3/1000 strokes : 151.5	hPa : 1200 Del. quantity
Tolerance	cm3/1000 strokes : 151.5 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance	Check tolerance cm3/1000s. : +- 4.0
cm3/1000s. : + 4.0	Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance + cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
	control lever
Rated speed rpm : 550	position degrée : 96.0 tolerance degree : + 4.0
Rack travel in mm: 5.00	RATED SPEED
Tolerance mm : + 0.10 + Del. quantity +	rack travel mm : 11.40 Rated speed rpm : 1160
cm3/1000 strokes : 21.5 +	Tolerance 1/min : + 5
Tolerance + cm3/1000 strokes : + 2.0 +	rack travel mm : 6.70
Check tolerance	Rated speed rpm : 1205
cm3/1000s. : +- 4.5 +- Spreed	Tolerance 1/min : +- 5
Tolerance + cm3/1000 strokes : 3.5 +	rack travel mm : 1.00 Tolerance mm : + 0.70
Check tolerance +	Rated speed rpm : 1325
cm3/1000s. : 5.5	rack travel mm : 6.70 Rated speed rpm : 1205
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1205
GUIDE SLEEVE POSITION	LOW IDLE
+	control lever
control lever	position degree : 77.0
position degree : -3 + Rated speed rpm : 800 +	tolerance degree : + 4.0
+	Control lever difference Grad : 19.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	tolerance degree : + 4.0
governor spring pre-tension +	Setting point w/out bumper spring
click setting x : 2.00 +	Rated speed rpm : 550

rack travel mm Tolerance mm	: 4.50 : + 0.10	+ Del. quantity + cm3/1000 strokes	: 166.5
		+ Tolerance	
Testing:		cm3/1000 strokes Check tolerance	
Rated speed rpm	: 550	cm3/1000s.	: + 5.0
rack travel mm Tolerance mm	: 5.00	+ Spreed	
Tolerance mm	: +- 0.10	+ Tolerance + cm3/1000 strokes	
Rated speed rpm	: 100	+ Check tolerance	
		- cm3/1000s.	: 9.0
CRT mm min.	; > 19.00	Anomaid procesure	
<del></del>		Aneroid pressure	• _
TORQUE CONTROL		+ Rated speed rpm	: 500
	4400	+ Del. quantity	
Rated speed rpm	: 7100	+ cm3/1000 strokes + Tolerance	: 119.5
rack travel mm Tolerance mm	: + 0.05	+ rolerance + cm3/1000 strokes	: + 1.0
		+ Check tolerance	
Rated speed rpm	: 750	+ cm3/1000s.	: +- 3.0
rack travel mm Tolerance mm	: 13.40	†	
loterance mm	. — U.IU	I	**************************************
			LIVERY
ANEROID/ALTITUDE		<b>†</b>	. 400
COMPENSATOR TEST		+ Rated speed rpm	: 100 : 20.50
		rack travel mm Tolerance mm	: +- 1.00
SETTING		→ Del. quantity	
		+ cm3/1000 strokes	: 145.5
Rated speed rpm		+ Tolerance	
Pressure hPa	: 1200	cm3/1000 strokes Check tolerance	
Pressure hPa	: -	+ cm3/1000s.	
Pressure hPa Rated speed rpm rack travel mm	: 500	+	
rack travel mm	: 10.50	+	
Tolerance mm	: +- 0.20	İ	
MEASUREMENT		LOW IDLE	
Rated speed rpm	: 500	Rated speed rpm	: 550
<b>A.</b>	. 700	+ Del. quantity	. 24 5
Pressure hPa rack travel mm	: 790 : 12.20	+ cm3/1000 strokes + Tolerance	: 21.5
Tolerance mm	: +- 0,20	+ cm3/1000 strokes	: <del>+</del> 2.0
		+ Check tolerance	
Pressure hPa	: 620	+ cm3/1000s.	: <del>←</del> 4.5
rack travel mm	: 11.30	+ Spreed	
Tolerance mm	: +- 0.20	+ Tolerance + cm3/1000 strokes	: 3.5
Start interlock		Check tolerance	. 3.3
		cm3/1000s.	: 5.5
FUEL DELIVERY CHA	ARACTERISTICS	<del></del> ‡	
<b></b>		+	<del></del>
Aneroid pressure hPa	: 1200	+ + End of test spec	ification sheet
nra Rated speed rpm	: 750	T End of test spec	ilitation sheet
nateu speeu ipili	. , , , ,	7	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 31.12.96 : ISO 4113 Test oil

Combination No. : 0 403 466 160

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governer design. : RSV500...1100MW2A378

Governer no. : 0 420 085 261

Cust. part No. : 3927129

Customer-spec. information

Customer : CDC Motor : 6 CTA Power KW : 173.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C : + 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 : + 0.50 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 : +- 0.50 Phasing

Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50 Tolerance :  $\leftarrow$  0.50

Check

: +- 0.75 tolerance \*NW

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel 15.00 Difference \* CS : 1.50

BASIC SETTING

Rated speed rpm : 1100 +	
Rack travel in mm: 12.45	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance non : + 0.05	Rated speed rpm : 1100 Aneroid pressure
Del. quantity + cm3/1000 strokes : 151.5 +	hPa : 1200 Del. quantity cm3/1000 strokes : 151.5
Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : +- 4.0	cm3/1000s. : +- 4.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance + cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance : 7.5	CONTROL LEVER
+	control lever
Rated speed rpm : 500 +	position degree : 108.0
Rated speed rpm : 500	tolerance degree : +- 4.0
Rack travel in mm: 5.00	RATED SPEED
Tolerance mm : + 0.10 +	rack travel mm : 11.40
Del. quantity + cm3/1000 strokes : 21.5 +	Rated speed rpm : 1160 Tolerance 1/min : +- 5
Tolerance	Toterance Transition : +- 3
cm3/1000 strokes : +- 2.0 +	rack travel mm : 6.30
Check tolerance	Rated speed rpm : 1230
cm3/1000s. : + 4.5 +	Tolerance 1/min : +- 5
Spreed +	rack travel mm : 1.00
Tolerance + cm3/1000 strokes : 3.5 +	rack travel mm : 1.00 Tolerance mm : +- 0.70
Check tolerance	Rated speed rpm : 1375
cm3/1000s. : 5.5	, ,
+	rack travel mm : 5.30
(D) CETTING OF TALLECTION DUMP	Rated speed rpm : 1230
(B) SETTING OF INJECTION PUMP WITH GOVERNOR +	
	LOW IDLE
GUIDE SLEEVE POSITION	
+	control lever
control lever	position degree : 86.0
position degree : -3 + Rated speed rpm : 800 +	tolerance degree : +- 4.0
Tared speed (pin . OUU	Control lever difference
Rack travel in mm: 0.50	Grad : 22.0
Tolerance mm : + 0.20	tolerance degree : + 4.0
governor spring + pre-tension +	Setting point w/out bumper spring
click setting x : 3.75	Rated speed rpm : 500

rack travel mm		+ Del. quantity
Tolerance mm		cm3/1000 strokes : 167.5
Testing:		cm3/1000 strokes : + 2.0 Check tolerance
Rated speed rpm	: 500	+ cm3/1000s. : +- 5.0
rack travel mm Tolerance mm	: 5.00 : +- C.10	+ Spreed + Tolerance
ic cerance ima	: +- 0.10	+ cm3/1000 strokes : 6.0
Rated speed rpm	: 100	Check tolerance : 9.0
CRT mm min.	: > 19.00	+
		+ Aneroid pressure + hPa : -
TORQUE CONTROL		+ Rated speed rpm : 500
Dada al consent con	4400	+ Del. quantity + cm3/1000 strokes : 119.5
Rated speed rpm	: 1100 : 12.45	+ cm3/1000 strokes : 119.5 + Tolerance
rack travel mm Tolerance mm	: + 0.05	+ cm3/1000 strokes : 1.0
		+ Check tolerance
Rated speed rpm	: 750	+ cm3/1000s. : + 3.0
rack travel mm Tolerance mm	: 73.4U · + 0.40	İ
10cci @ ice iiiii		
AMERICA AND THE STATE OF THE ST	75	STARTING FUEL DELIVERY
ANEROID/ALTITUDE COMPENSATOR TEST		+ Rated speed rpm : 100
THE TOTAL OF THE		+ Rated speed rpm : 100 + rack travel mm : 20.50
		+ Tolerance mm : + 1.00
SETTING		+ Del. quantity
D. A. J.	<b>500</b>	+ cm3/1000 strokes : 145.5
Rated speed rpm Pressure hPa	: 500 • 1200	+ Tolerance + cm3/1000 strokes : + 10.0
TOOLE IN A	. 1200	+ Check tolerance
Pressure hPa	: -	- cm3/1000s. : - 13.0
Rated speed rpm	: 500 : 10.50	†
rack travel mm		†
Tolerance mm	: <del>+-</del> 0.20	Ţ
MEASUREMENT		+ LOW IDLE
Rated speed rpm	: 500	Rated speed rpm : 500
Dogger La	. 700	+ Del. quantity
Pressure hPa rack travel mm	: 790 : 12.20	+ cm3/1000 strokes : 21.5 + Tolerance
Tolerance mm	: +- 0.20	+ cm3/1000 strokes : + 2.0
		+ Check tolerance
Pressure hPa	: 620	+ cm3/1000s. : $+$ 4.5
rack travel mm	: 11.30 : +- 0.05	+ Spreed
Tolerance mm	; <del></del> 0.05	+ Tolerance + cm3/1000 strokes : 3.5
Start interlock		+ Check tolerance
		cm3/1000s. : 5.5
FUEL DELIVERY CHA	RACTERISTICS	<b>‡</b>
Ananoid necessar		1
Aneroid pressure hPa	: 1200	+ End of test specification sheet
Rated speed rpm		I was a cost specification sheet

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31.12.96 : ISO 4113

Combination No. : 0 403 466 162

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governer design. : RSV500...1100MW2A380

Governer no. : 0 420 085 263

Cust. part No. : 3930454

Customer-spec. information Customer : CDC Motor : 6 CTA : 160.3 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. \*C

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5

Tolerance bar : + 1.5

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm 3.55

Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : +-- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8,50 : +- 0.50

Tolerance

Check

tolerance \*NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

15.00

Difference \* CS : 1.50

Rated speed rpm : 1100 -	
Rack travel in mm: 11.95 - Tolerance mm: + 0.05 -	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100
Del. quantity	Aneroid pressure hPa : 1200
cm3/1000 strokes : 140.5 - Tolerance	Del. quantity - cm3/1000 strokes : 140.5 - Tolerance
cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. ; + 4.0	cm3/1000S. : +- 4.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance - cm3/1000 strokes : 4.0 -	cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
	control lever
-	position degree : 94.0
Rated speed rpm : 550	tolerance degree : +- 4.0
Rack travel in mm: 5.00	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 10.90
Del. quantity - cm3/1000 strokes : 21.5 -	Rated speed rpm : 1190 Tolerance 1/min : +- 5
Tolerance -	+ Toterance Trimin : +- 3
cm3/1000 strokes : + 2.0	rack travel mm : 5.80
Check tolerance -	Rated speed rpm : 1235
cm3/1000s. : +- 4.5 Spreed	Tolerance 1/min : +- 5
Tolerance	rack travel mm : 1.00
cm3/1000 strokes : 3.5 - Check tolerance -	Tolerance mm : +- 0.70 Rated speed rpm : 1400
cm3/10 : 5.5	Rated speed (pill : 1400
	rack travel mm : 5.80 Rated speed rpm : 1235
(B) SETTING OF INJECTION PUMP - WITH GOVERNOR -	<del> </del>
-	LOW IDLE
GUIDE SLEEVE POSITION -	† -
-	control lever
control lever	position degree : 72.0
position degree : -3	tolerance degree : + 4.0
nated speed (Mill . OUC	Control lever difference
Rack travel in mm: 0.50	Grad : 22.0
Tolerance mm : + 0.20	tolerance degree : +- 4.0
governor spring - pre-tension -	Setting point w/out bumper spring
click setting x : 3.00	Rated speed rpm : 550

rack travel mm Tolerance mm	: 4.50 : +- 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 550 : 5.00 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	and the second second second second second second second second second second second second second second seco
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.95 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1200
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.90 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 755 : 11.60 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 625 : 11.10 : + 0.20
Start interlock	
EUC DEL TUENO CUA	PACTEDISTICS
FUEL DELIVERY CHA	INAC   EKTO   170
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	
cm3/1000 strokes Tolerance	: 123.0
cm3/1000 strokes	: +- 1.0

Check tolerance cm3/1000s.	: +-	3.0	
STARTING FUEL DEL	IVERY		
Rated speed rpm	:	100	
rack travel mm	:	20.50	
Tolerance mm	: +-	1.00	
Del. quantity cm3/1000 strokes	:	145.5	
Tolerance	•	140.0	
cm3/1000 strokes	: +-	10.0	
Check tolerance			
cm3/1000s.	: +-	13.0	
LOW IDLE		750	
Rated speed rpm	:	550	
Del. quantity cm3/1000 strokes	:	21.5	
Tolerance	•	21.5	
cm3/1000 strokes	: +-	2.0	
Check tolerance			
cm3/1000s.	: +-	4.5	
Spreed Tolerance			
cm3/1000 strokes	:	3.5	
Check tolerance	•	7.5	
cm3/1000s.	:	5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 31.12.96 Edition : ISO 4113 Test oil

Combination No. : 0 403 466 163

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governer design. : RSV450...1000MW2A381

Governer no. : 0 420 085 264

Cust. part No. : 3929166

Customer-spec. information Customer : CDC Motor : 6 CT Power KW : 153.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 : ← 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Phasing Tolerance : **←** 0.50

Check

tolerance \*NW : +- U.75

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW ; + 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack

15.00 travel Difference \* CS : 2.00

Rated speed rpm : 1000	-
	- FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 12.25	-
Tolerance mm : + 0.05	- Rated speed rpm : 1000
	- Aneroid pressure
Del. quantity	- hPa : 1200
cm3/1000 strokes : 148.0	- Del. quantity
T.1.	- cm3/1000 strokes : 148.0
Tolerance	- Tolerance
cm3/1000 strokes : +- 1.0	- cm3/1000 strokes : +- 1.0 - Check tolerance
Check tolerance	- cm3/1000s. : +- 4.0
cm3/1000s. : +- 4.0	- Spreed
(110) 10000: 4.0	- Tolerance
Spreed	- cm3/1000 strokes : 4.0
	- Check tolerance
Tolerance	- cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	•
	•
Check tolerance	
cm3/1000s. : 7.5	- CONTROL LEVER
	•
	- control lever
·	- position degree : 100.0
Rated speed rpm : 450	- tolerance degree : +- 4.0
Bush Americal dia are a F / G	- DATER ORFER
Rack travel in mm: 5.40 - Tolerance mm : +- 0.10 -	- RATED SPEED
	- rack travel mm : 11.20
Del. quantity - cm3/1000 strokes : 21.0	- Rated speed rpm : 1065 - Tolerance 1/min : +- 5
Tolerance	- Toterance Timin : +- 5
cm3/1000 strokes : +- 2.0	- rack travel mm : 7.00
Check tolerance	- Rated speed rpm : 1120
cm3/1000s. : +- 4.5	- Tolerance 1/min : + 5
Spreed	•
Tolerance	- rack travel mm : 1.00
cm3/1000 strokes : 3.5	- Rated speed rpm : 1200
Check tolerance	-
cm3/1000s. : 5.5	- rack travel mm : 7.00
į	- Rated speed rpm : 1120
	-
(B) SETTING OF INJECTION PUMP -	<b>-</b>
WITH GOVERNOR	
3	- LOW IDLE
	च्या क्याच्या -
GUIDE SLEEVE POSITION	-
	- control lever
+	- position degree : 81.0
control lever	- tolerance degree : +- 4.0
position degree : - 3	-
Rated speed rpm : 800 -	- Control Lever difference
	- Grad : 19.0
Rack travel in mm: 0.50	- tolerance degree : +- 6.0
Tolerance mm : + 0.20 -	· Catting maint toward and
	<ul> <li>Setting point w/out bumper spring</li> </ul>
governor spring	Poted speed spe
pre-tension - click setting x : 3.75	- Rated speed rpm : 450 - rack travel mm : 4.90
CLICK SECURITY A . J./J	- 1966 619765 MM . 4.7U

: +- 0.10
: 450
: 5.40
: +- 0.10
: 100
: > 19.00
: 1000
: 12.25
: +- 0.05
: 750
: 750 : 12.45
· + 0.10
: 500
: 500 : 1200
• -
500
: 10.50
: <del>+-</del> 0.20
: 500
: 850
: 12.10
: +- 0.20
. 500
: 590 : 11.00
: + 0.20
ARACTERISTICS
: 1200
: 750

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 155.0 : + 2.0 : + 5.0 : 6.0 : 9.0 : 500 : 117.0
Tolerance	
cm3/1000 strokes Check tolerance	: ← 1.0
cm3/1000s.	: +- 3.0
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 20.50 : + 1.00
LOW IDLE	
Rated speed rpm Del. quantity	: 450
cm3/1000 strckes Tolerance	: 21.0
cm3/1000 strokes	: <del>←</del> 2.0
Check tolerance cm3/1000S. Spreed Tolerance	: +- 4.5
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31,12,96 : ISO 4113

Combination No. : 0 403 466 164

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governer design. : RSV500...1100MW2A382

Governer no.

: 0 420 085 265

Cust. part No.

: 3929171

Customer-spec. information Customer : CDC

Motor

: 6 CTA

Power KW

: 171.5

# TEST BENCH REQUIREMENTS

Inlet line

: 3.2

Test oil inlet

temp. ℃

Tolerance °C

: +- 2.0

Overflow valve

: 2 417 413 093

Inlet press. bar :

2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 014

Outside diameter :

6.0

REMARKS

x inside diameter:

x length mm :

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : +- 1.0

tolerance mm :  $\leftarrow$  0.10

Prestroke mm

: 3.55 : +- 0.05

Tolerance mm Check

2.0

600

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance

: +- 0.50

Check

tolerance NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50 Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no.

: 1

Beginning of delivery differende

and maximum rack

travel

Difference \* CS : 1.50

15.00

Rated speed rpm : 1100	<del></del>
Rack travel in mm: 12.45	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.05	Rated speed rpm : 1100 Aneroid pressure
Del. quantity cm3/1000 strokes : 151.5	hPa : 1200 Del. quantity
Tolerance cm3/1000 strokes : + 1.0	<pre>cm3/1000 strokes : 151.5 Tolerance cm3/1000 strokes : +- 1.0</pre>
+	Check tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000s. : +- 4.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
	control lever
Rated speed rpm : 500	position degree : 98.0 tolerance degree : +- 4.0
Rack travel in mm: 5.00	FATED SPEED
Tolerance mm : + 0.10 + Del. quantity	rack travel mm : 11.40 Rated speed rpm : 1160
cm3/1000 strokes : 21.5	Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 +	rack travel mm : 5.70
Check tolerance + 4.5 +	Rated speed rpm : 1205 Tolerance 1/min : +- 5
Spreed	
Tolerance + cm3/1000 strokes : 3.5	rack travel mm : 1.00 Tolerance mm : +- 0.70
Check tolerance	Rated speed rpm : 1325
cm3/1000s. : 5.5	rack travel mm : 6.70 Rated speed rpm : 1205
(B) SETTING OF INJECTION PUMP WITH GCVERNOR	Nated Speed (pill . 120)
GUIDE SLEEVE POSITION	LOW IDLE
GOIDE SEEEVE POSITION	
control lever	control lever position degree : 77.0
position degree : -3 Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50	Control lever difference Grad : 21.0
Tolerance mm : + 0.20	tolerance degree : +- 4.0
governor spring pre-tension	Setting point w/out bumper spring
click setting x : 2.00 +	Rated speed rpm : 500

rack travel mm Tolerance mm	: 4.50 : + 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 5.00 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.45 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.40 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1200
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.50 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 790 : 12.25 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 620 : 11.25 : + 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS

Del. quantity			
cm3/1000 strokes	:		167.5
Tolerance			
cm3/1000 strokes	:	+-	2.0
Check tolerance			
cm3/1000s.	:	+-	5.0
Spreed			
Tolerance			
cm3/1000 strokes	:		6.0
Check tolerance			
cm3/1000s.	:		9.0
A			
Aneroid pressure	_		
hPa	:		-
PATAM CRAAM FRM	•		5 <b>00</b>
Rated speed rpm	•		
Del. quantity	·		440 5
Del. quantity cm3/1000 strokes	:		119.5
Del. quantity cm3/1000 strokes Tolerance	:	•	
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes	:	+-	119.5
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes Check tolerance	:	+-	1.0
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes	:	+-	
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes Check tolerance	:	<del>+-</del>	1.0
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes Check tolerance	:	+-	1.0
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	:	+- +- FRY	1.0
Del. quantity cm3/100C strokes Tolerance cm3/1000 strokes Check tolerance	:	+- +- ERY	1.0

Rated speed rpm rack travel mm Tolerance mm	: +-	100 20.50 1.00
Del. quantity cm3/1000 strokes Tolerance	:	145.5
cm3/1000 strokes Check tolerance	: +-	10.0
cm3/1000s.	: +-	13.0

# LOW IDLE

Rated speed rpm	:	500
Del. quantity cm3/1000 strokes	:	21.5
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.5
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	3.5
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31,12,96 : ISO 4113

Combination No. : 0 403 466 165

Injection pump

Pump designation : PES6MW100/120RS1241

EP type number : 0 413 406 240

Governor

Governer design. : RSV450...1250MWOA383

Governer no. : 0 420 085 266

Cust. part No. : 3929164

Customer-spec. information Customer : CDC Motor : 6 CT Power KW : 133.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 4C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm 2.80 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.25 Tolerance : **←** 0.50

Check

: +- 0.75 tolerance \*NW

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel 15.00 Difference \* CS : 1.50

Rated speed rpm : 1250	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 11.05	
Tolerance mm : $\leftarrow$ 0.05 $+$	Rated speed rpm : 1250
	Aneroid pressure
Del. quantity + cm3/1000 strokes : 123.5 +	hPa : 900 Del. quantity
timo/ todo strokes: 125.5	cm3/1000 strokes : 123.5
Tolerance	Tolerance
cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0
	Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : $\leftarrow$ 4.0 $+$	Spreed
Sancad	Tolerance cm3/1000 strokes : 4.0
Spreed	Check tolerance
Tolerance	cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	
Check tolerance	
cm3/1000s. : 7.5	CONTROL LEVER
+	, 
†	control lever
Rated speed rpm : 450	position degree : 96.0 tolerance degree : +- 4.0
rated speed thin . 450	toterance degree 4.0
Rack travel in mm: 5.90	RATED SPEED
Tolerance mm : +- 0.10	rack travel mm : 9.90
Del. quantity	Rated speed rpm : 1325
cm3/1000 strokes : 27.0 +	Tolerance 1/min : +- 5
Tolerance +	
cm3/1000 strokes : +- 2.0 +- Check tolerance +-	rack travel mm : 6.70 Rated speed rpm : 1390
cm3/1000s. : +- 4.5	Rated speed rpm : 1390 Tolerance 1/min : +- 5
Spreed	
Tolerance	rack travel mm : 1.00
cm3/1000 strokes : 3.5	Tolerance mm : +- 0.70
Check tolerance	Rated speed rpm : 1510
cm3/1000s. : 5.5	
†	rack travel mm : 6.70
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1390
WITH GOVERNOR	•
1	
+	
CUITAGE OF COURTE DOCUTIONS	LOW IDLE
GUIDE SLEEVE POSITION	•
1	control lever
control lever	position degree : 76.0
position degree : -3	tolerance degree : +- 4.0
Rated speed rpm : 800 +	
†	Control lever difference
Rack travel in mm: 0.50	Grad : 20.0
Tolerance mm : $\leftarrow$ 0.20	tolerance degree : +- 4.0
governor spring	Setting point w/out bumper spring
pre-tension	occerne bounc avoir primper spilling
click setting x : 4.50	Rated speed rpm : 450
· · · · · · · · · · · · · · · · · · ·	•

rack travel mm Tolerance mm	: : +-	5.40 0.10
Testing:		

Rated speed rpm 450 5.90 rack travel mm : +- 0.10 Tolerance mm

Rated speed rpm 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm 1250 11.05 rack travel mm Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 500 900 Pressure hPa

Pressure hPa 500 Rated speed rpm rack travel mm 10.20 Tolerance mm : + - 0.20

**MEASUREMENT** 

500 Rated speed rpm :

600 Pressure hPa 10.60 rack travel mm Tolerance mm : +- 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 500 Rated speed rpin Del. quantity

cm3/1000 strokes : 114.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.

: +-3.0 STARTING FUEL DELIVERY

100 Rated speed rpm 20.50 rack travel mm Tolerance mm : +- 1.00 Del. quantity

cm3/1000 strokes : 171.5

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 13.0

LOW IDLE

Rated speed rpm : 450 Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.5 Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s.5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31.12.96 : 51.12.70 : ISO 4113

Combination No. : 0 403 466 166

Injection pump

Pump designation : PES6MW100/120RS1241

EP type number : 0 413 406 240

Governor

Governer design. : RSV450...1250MW0A384

Governer no. : 0 420 085 267

Cust. part No. : 3929163

Customer-spec. information Customer : CDC Motor : 6 CT Power KW : 160.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C · + 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

par values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : **←** 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.25 : +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

: 15.00 travel Difference \* CS : 1.50

Rated speed rpm : 1250	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 12.25	Dated anasi mm 4 5250
Tolerance mm : + 0.05	Rated speed rpm : 1250 Aneroid pressure
Del. quantity	hPa : 1200
cm3/1000 strokes : 142.5	Del. quantity
+	cm3/1000 strokes : 142.5
Tolerance + 1.0 +	Tolerance
cm3/1000 strokes : $\leftarrow$ 1.0	cm3/1000 strokes : + 1.0 Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : +- 4.0	Spreed
<u> </u>	Tolerance
Spreed	cm3/1000 strokes : 4.0
Tolerance	Check tolerance cm3/1000S. : 7.5
cm3/1000 strokes : 4.0	cm3/1000S. : 7.5
CIRCY 1000 SETORES . 4.0	
Check tolerance	
cm3/1000s. : 7.5	CONTROL LEVER
	and American design
†	control lever position degree : 93.0
Rated speed rpm : 450	tolerance degree : +- 4.0
11466 00004 10111	total alloc dagles to the third
Rack travel in mm: 5.00	RATED SPEED
Tolerance mm : + 0.10 +	rack travel mm : 11.20
Del. quantity	Rated speed rpm : 1315
cm3/1000 strokes : 14.0 +	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	rack travel mm : 6.60
Check tolerance	Rated speed rpm : 1390
cm3/1000s. : +- 4.5	Tolerance 1/min : + 5
Spreed +	4.00
Tolerance + cm3/1000 strokes : 3.5 +	rack travel mm : 1.00 Tolerance mm : +- 0.70
cm3/1000 strokes : 3.5 + Check tolerance +	Tolerance mm : +- 0.70 Rated speed rpm : 1495
cm3/1000s. : 5.5	Nated Speed (pill : 1475
+	rack travel mm : 6.60
+	Rated speed rpm : 1390
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	•
Ţ	
	LOW IDLE
GUIDE SLEEVE POSITION +	
†	control lever
control lever	position degree : 72.0
position degree : -3	tolerance degree : + 4.0
Rated speed rpm : 800	_
t	Control lever difference
Rack travel in mm: 0.50	Grad : 21.0
Tolerance mm : + 0.20	tolerance degree : +- 4.0
governor spring	Setting point w/out bumper spring
pre-tension +	
click setting x : 4.50	Rated speed rpm : 450
·	

4.50 0.10 450 5.00 0.10 100 19.00
5.00 0.10 100
5.00 0.10 100
-
19.00
1250 12.25 0.05
500 1200
500 9.90 0.20
500
800 11.35 0.20
600 10.35 0.25

Check tolerance cm3/1000s. : + 3.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50
Tolerance mm : + 1.00
Del. quantity Del. quantity cm3/1000 strokes : 171.5 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : **←** 13.0 LOW IDLE Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance

End of test specification sheet

cm3/1000 strokes : 3.5

cm3/1000s. : 5.5

Check tolerance

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31.12.96 : ISO 4113

Combination No. : 0 403 466 167

Injection pump

Pump designation : PES6MW100/120RS1240

EP type number : 0 413 406 239

Governor

Governer design. : RSV475...1000MW2A388 Governer no. : 0 420 085 268

Cust. part No. : 3929173

Customer-spec. information Customer : CDC Motor : 6 CTA Power KW : 171.5

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 : +- 0.05 Tolerance mm Check

: + 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.00 : +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

15.00 travel Difference \* CS : 1.50

Rated speed rpm : 1000	†
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 12.95	1
Tolerance mm : +- 0.05	Rated speed rpm : 1000
	+ Aneroid pressure
Del. quantity	+ hPa : 1200
cm3/1000 strokes : 157.0	+ Del. quantity
	+ cm3/1000 strokes : 157.0
Tolerance	+ Tolerance
cm3/1000 strokes : + 1.0	+  cm3/1000  strokes : + 1.0
	+ Check tolerance
Check tolerance cm3/1000s. : +- 4.0	+  cm3/1000s. : + 4.0
cm3/1000s. : +- 4.0	+ Spreed - Tolerance
Spreed	+ roterance + cm3/1000 strokes : 4.0
opreed	Check tolerance
Tolerance	+ cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	1.5
TIP TIPE	1
Check tolerance	<u> </u>
cm3/1000s. : 7.5	+ CONTROL LEVER
	+
	- control lever
	position degree : 102.0
Rated speed rpm : 475	+ tolerance degree : +- 4.0
	+
Rack travel in mm: 5.15	+ RATED SPEED
Tolerance mm : + 0.10	+ rack travel mm : 11.90
Del. quantity	+ Rated speed rpm : 1055
cm3/1000 strokes : 21.5	† Tolerance 1/min : + 5
Tolerance	+
cm3/1000 strokes : + 2.0	+ rack travel mm : 5.80
Check tolerance	Rated speed rpm : 1135
cm3/1000s. : +- 4.5	+ Tolerance 1/min : +- 5
Spreed	1 00
Tolerance	+ rack travel mm : 1.00
cm3/1000 strokes : 3.5	+ Tolerance mm : + 0.70
Check tolerance cm3/1000s. : 5.5	Rated speed rpm : 1230
cm3/1000s. : 5.5	rack travel mm : 5.80
	Rated speed rpm : 1135
(B) SETTING OF INJECTION PUMP	I hated speed (pill : 1133
WITH GOVERNOR	I
Wall AAAMMAN	1
	+ LOW IDLE
GUIDE SLEEVE POSITION	+
	+
	+ control lever
control lever	position degree : 83.5
position degree : - 3	+ tolerance degree : +- 4.0
Rated speed rpm : 800	†
	Control lever difference
Rack travel in mm: 0.50	+ Grad : 18.5
Tolerance mm : + 0.20	tolerance degree : + 4.0
•	† a.u
governor spring	+ Setting point w/out bumper spring
pre-tension	† Botad around arm 1/25
click setting x : 3.25	+ Rated speed rpm : 475

rack travel mm Tolerance mm		†	Del. quantity cm3/1000 strokes Tolerance	: 169.0
Testing:		Ŧ	cm3/1000 strokes	: <del>+</del> 2.0
Rated speed rpm rack travel mm Tolerance mm	: 475 : 5.15	-	Check tolerance cm3/1000s. Spreed	: <del>←</del> 5.0
	: +- 0.10	‡	Tolerance cm3/1000 strokes	: 6.0
Rated speed rpm		‡	Check tolerance cm3/1000s.	: 9.0
CRT mm min.	: > 19.00	‡	Aneroid pressure	
TORQUE CONTROL		+	hPa Rated speed rpm	: 500
Rated speed rpm rack travel mm		1	Del. quantity cm3/1000 strokes Tolerance	: 128.5
Tolerance min	: + 0.05	<u> </u>	cm3/1000 strokes Check tolerance	: +- 1.0
Rated speed rpm rack travel mm Tolerance mm	: 13.70	<del> </del>	cm3/1000s.	: +- 3.0
	0.10		STARTING FUEL DEL	TVERY
ANEROID/ALTITUDE		1.	OTANTING FOLL DEL	IVENT
COMPENSATOR TEST		+	Rated speed rpm	: 100
		†	rack travel mm Tolerance mm	: 20.50 : + 1.00
SETTING		Ī	Del. quantity cm3/1000 strokes	_
Rated speed rpm Pressure hPa	: 500 : 1200		Tolerance cm3/1000 strokes	
	, ,,,,,,,	+	Check tolerance	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: -500 : 11.00 : + 0.20	† † †	cm3/1000s.	: +- 13.0
MEASUREMENT		‡	LOW IDLE	
Rated speed rpm	: 500	Ī	Rated speed rpm Del. quantity	: 475
Pressure hPa rack travel mm	: 790 : 12.70	$\frac{1}{2}$	cm3/1000 strokes Tolerance	: 21.5
Tolerance mm	: + 0.20	1	cm3/1000 strokes Check tolerance	: +- 2.0
Pressure hPa rack travel mm	: 620 : 11.80	+	cm3/1000s. Spreed	: +- 4.5
Tolerance mm	: <b>←</b> 0.20	†	Tolerance cm3/1000 strokes	: 3.5
Start interlock		Ī	Check tolerance cm3/1000s.	: 5.5
FUEL DELIVERY CHA	RACTERISTICS	+		
Aneroid pressure	: 1200	Ī	End of test speci	fication sheet
Rated speed rpm	: 750	+		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 31,12,96 Test oil : ISO 4113

Combination No. : 0 403 466 172

Injection pump

Pump designation : PES6MW100/120RS1241

EP type number : 0 413 406 240

Governor

Governer design. : RSV450...1250MW0A392

Governer no. : 0 420 085 280

Cust. part No. : 3930412

Customer-spec. information Customer : CDC : 6 CT Motor : 150.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

K01

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80Tolerance mm :  $\leftarrow 0.05$ 

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

Tolerance : 0-60-120-180-240

Check

: +- 0.75 tolerance \*NW

Start of delivery blocking

\*NW after s.o.d. : 8.25 Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00 Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1250	
Rack travel in mm: 11.45 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 132.0	Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 132.0
Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000s. : +- 4.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
Rated speed rpm : 450	control lever position degree : 96.0 tolerance degree : + 4.0
Rack travel in mm: 5.55	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 10.40
Del. quantity + cm3/1000 strokes : 27.0 +	Rated speed rpm : 1320 Tolerance 1/min : +- 5
Tolerance	Toterance Minn : +- 3
cm3/1000 strokes : + 2.0 + Check tolerance	rack travel mm : 6.80 Rated speed rpm : 1390
cm3/1000s. : + 4.5 Spreed	Tolerance 1/min : +- 5
Tolerance + cm3/1000 strokes : 3.5	rack travel mm : 1.00 Tolerance mm : +- 0.70
Check tolerance	Rated speed rpm : 1500
cm3/1000s. : 5.5	rack travel mm : 6.80
Ţ	Rated speed rpm : 1390
(B) SEITING OF INJECTION PUMP WITH GOVERNOR	
	LOW IDLE
GUIDE SLEEVE POSITION	
Ţ	control lever
control lever position degree : -3 Rated speed rpm : 800	position degree : 77.0 tolerance degree : + 4.0
· · · · · · · · · · · · · · · · · · ·	Control lever difference
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Grad : 19.0 tolerance degree : +- 4.0
governor spring pre-tension	Setting point w/out bumper spring
click setting x : 5.00 +	Rated speed rpm : 450
K02	

rack travel mm Tolerance mm	: 5.05 : + 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 450 : 5.55 : + 0.10
Rated speed rpm	: 100
CRT mmm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 11.45 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1200
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.05 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 800 : 11.35 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 600 : 10.50 : +- 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
hPa	: - : 500
Rated speed rpm Del. quantity cm3/1000 strokes	
Tolerance cm3/1000 strokes	

Check tolerance cm3/1000s.	: +- 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 100 : 20.50 : +- 1.00
cm3/1000 strokes Tolerance	: 171.5
cm3/1000 strokes	: <del>+</del> 10.0
Check tolerance cm3/1000s.	: + 13.0
LOW IDLE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: ← 2.0 : ← 4.5 : 3.5
cm3/1000s.	: 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.01.97 Test oil : ISO 4113

Combination No. : 0 403 466 174

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governer design. : RSV500...1100MW0A398

Governer no. : 0 420 085 287

Cust. part No. : 3930122

Customer-spec. information Customer : CDC Motor : 6 CT : 112.5 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp, °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 093

2.0 Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240 Tolerance : ÷- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.50 : +- 0.50 Tolerance Check

: +~ O.75 tolerance \*NW

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

15.00 travel Difference \* CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

**K04** 

+	
Rack travel in mm: 9.95 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Reted speed rpm : 1100
Del. quantity cm3/1000 strokes : 112.0	Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity
Folerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 112.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 4.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0 Check tolerance
Tolerance + cm3/1000 strokes : 4.0 +	cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
Rated speed rpm : 500	control lever position degree : 102.0
Rack travel in mm: 5.60	tolerance degree : +- 4.0
Tolerance mm : +- 0.10 +- Del. quantity +- cm3/1000 strokes : 25.0 +-	RATED SPEED rack travel mm : 8.90 Rated speed rpm : 1165
Tolerance + cm3/1000 strokes : + 2.0	Tolerance 1/min : + 5
Check tolerance cm3/1000s. : + 4.5 spreed	rack travel mm : 6.00 Rated speed rpm : 1230 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 3.5 + Check tolerance cm3/1000s. : 5.5 + Check tolerance cm3/1000s.	rack travel mm : 1.00 Tolerance mm : +- 0.70 Rated speed rpm : 1400
tms/ 1000s	rack travel mm : 6.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1230
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 88.0 tolerance degree : +- 4.0
Rack travel in mm: 0.50 Tolerance mm: +- 0.20	Control lever difference Grad : 14.0 tolerance degree : +- 4.0
governor spring pre-tension click setting x : 3.50	Setting point w/out bumper spring Rated speed rpm : 500

rack travel mm Tolerance mm	: 5.10 : + 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 100
CRT mma min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 9.95 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 10.60 : +- 0.10
_	
_	RACTERISTICS
Start interlock  FUEL DELIVERY CHA  Aneroid pressure	
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm	: -
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: – : 750
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: – : 750
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: - : 750 : 122.0
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: - : 750 : 122.0 : + 2.0
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 750 : 122.0 : + 2.0 : + 5.0
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 750 : 122.0 : + 2.0 : + 5.0 : 6.0 : 9.0
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 750 : 122.0 : + 2.0 : + 5.0 : 6.0 : 9.0
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL  Rated speed rpm rack travel mm	: - : 750 : 122.0 : + 2.0 : + 5.0 : 6.0 : 9.0
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm	: - : 750 : 122.0 : + 2.0 : + 5.0 : 6.0 : 9.0 IVERY : 100 : 20.50 : + 1.00
Start interlock  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL  Rated speed rpm rack travel mm Tolerance mm Del. quantity	: - : 750 : 122.0 : + 2.0 : + 5.0 : 6.0 : 9.0 IVERY : 100 : 20.50 : + 1.00

LOW IDLE	
p p	: 500
Del. quantity cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: <del></del> 4.5
Spreed Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5

End of test specification sheet

Check tolerance cm3/1000s.

: <del>+-</del> 13.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 31.12.96 : ISO 4113

Combination No. : 0 403 466 176

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governer design. : RSV500...1100MW2A402

Governer no. : 0 420 085 292

Cust. part No. : 3931934

Customer-spec. information Customer : CDC Motor : 6 CT

Power KW

: 127.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : Tolerance bar  $: \leftarrow 0.1$ 

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : + 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

: 2.80 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5- 3- 6- 2-Firing order

: 0-60-120-180-240 Phasing

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.00 : +- 0.50 Tolerance

Check

tolerance \*NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

15.00 travel Difference \* CS : 2.00

BASIC SETTING

Rated speed rpm : 1100	
Rack travel in mm: 10.25	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.05	Rated speed rpm : 1100 Aneroid pressure
Del. quantity cm3/1000 strokes : 123.0	hPa : - Del. quantity
Tolerance	cm3/1000 strokes : 123.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance	<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0</pre>
cm3/1000s. : +- 4.0	Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance cm3/1000s. 7.5	CONTROL LEVER
<u> </u>	control lever position degree : 110.0
Rated speed rpm : 500	tolerance degree : +- 4.0
Rack travel in mm : 5.30	RATED SPEED
Tolerance mm : + 0.10 + Del. quantity	rack travel mm : 9.25 Rated speed rpm : 1170
cm3/1000 strokes : 29.0	Tolerance 1/min : + 5
cm3/1000 strokes : - 2.0	rack travel mm : 5.80
Check tolerance cm3/1000s. : + 4.5	Rated speed rpm : 1230 Tolerance 1/min : +- 5
Spreed + Tolerance +	rack travel mm : 1.00
cm3/1000 strokes : 3.5	Tolerance mm : + 0.70 Rated speed rpm : 1350
cm3/1000s. : 5.5	
‡	rack travel mm : 5.80 Rated speed rpm : 1230
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
GUIDE SLEEVE POSITION	LOW IDLE
+	control lever
control lever	position degree : 88.0
position degree : -3 + Rated speed rpm : 800 +	tolerance degree : + 4.0
Rack travel in mm: 0.50	Control lever difference Grad : 22.0
Tolerance mm : + 0.20	tolerance degree : + 6.0
governor spring pre-tension	Setting point w/out bumper spring
click setting x : 5.50	Rated speed rpm : 500
к08	

rack travel mm	•	4.80
Tolerance mm	; +-	0.10

# Testing:

Rated speed rpm	:	500	
rack travel mm	:	5.30	)
Tolerance mm	: 4	<b>- 0.1</b> 0	)

Rated speed rpm : 100

CRT mm min. : > 19.00

# TORQUE CONTROL

Rated speed rpm	:	110C
rack travel mm	:	10.25
Tolerance mm	: -	← 0.05

Rated speed rpm	:	1000
rack travel mm	:	10.60
Tolerance mm	:	← 0.10

Rated speed rpm	:	750
rack travel mm	:	10.60
Tolerance mm	: +-	0.20

# Start interlock

# FUEL DELIVERY CHARACTERISTICS

# Aneroid pressure

nra	:	-
Rated speed rpm	:	1000
Del. quantity		
cm3/1000 strokes	:	127.0

Tolerance cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 6.0 Check tolerance cm3/1000s.

: 9.0

# STARTING FUEL DELIVERY

Rated speed rpm rack travel mm	:	100 20.50
Tolerance mm Del. quantity	: +-	- 1.00
cm3/1000 strokes	:	177.0

Tolerance cm3/1000 strokes :  $\leftarrow$  10.0 Check tolerance cm3/1000s. : +~ 13.0

# LOW IDLE

Rated speed rpm Del. quantity	:	500	
cm3/1000 strokes Tolerance	:	29.0	
cm3/1000 strokes	: +-	2.0	
Check tolerance cm3/1000S.	: +	4.5	
Spreed Tolerance			
cm3/1000 strokes Check tolerance	:	3.5	
cm3/1000s.	:	5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.12.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 669

Injection pump

Pump designation : PE6P130A720RS7197 EP type number : 0 412 636 815

Governor

Governer design. : RQV425...975PA1292

Governer no. : 0 421 814 184

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE : 8215.42.985 Motor

Power KW : 260.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar : + 1.5 Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

: 5.05 Prestroke mm : +- 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance 'NW : +- 0.50

Start of delivery mark

tolerance \*NW : + 0.40

: 1 Barrel no.

#### BASIC SETTING

Rated speed rpm : 975

Rack travel in mm: 13.45 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 257.0

Tolerance cm3/1000 strokes :  $\leftarrow$  1.0

K10

		+ Tolerance mm : +- 0.25
Check tolerance cm3/1000s.	: +- 4.0	+ Rated speed rpm : 1220 + guide sleeve
Spreed		travel mm : 11.50 Tolerance mm : + 0.50
Tolerance cm3/1000 strokes	: 5.0	CHINE OF EERE DOCTION
Check tolerance		GUIDE SLEEVE POSITION
cm3/1000s.	: 8.0	t control lever position degree : - 1
	405	Rated speed rpm : 1125
Rated speed rpm	: 425	+ Rack travel in mm : 10.00
Rack travel in mm	: 5.00	+ Tolerance mm : +- 2.70
Tolerance mm	· · · · · · · · · · · · · · · · · · ·	1
Del. quantity		
cm3/1000 strokes	: 22.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance		†
cm3/1000 strokes	: ← 3.0	Rated speed rpm : 975
Check tolerance		+ Aneroid pressure
cm3/1000s.	: <del></del> 7.0	+ hPa : 900
Spreed		+ Del. quantity
Tolerance		+ cm3/1000 strokes : 257.0
cm3/1000 strokes	: 8.0	+ Tolerance
Check tolerance		+ cm3/1000 strokes : → 1.0
cm3/1000s.	: 12.0	+ Check tolerance
		+ cm3/1000s. : + 4.0
(B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV		Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0
Rated speed rpm	: 1034	
guide sleeve		+ CONTROL LEVER
travel mm	: 7.23	+
Tolerance mm	: <del></del> 0.15	+ control lever
		+ position degree : 119.0
Rated speed rpm guide sleeve	: 425	tolerance degree : + 4.0
travel mm	: 2.40	+ RATED SPEED
Tolerance mm	: +- 0.20	rack travel mm : 12.40
	<del></del>	+ Rated speed rpm : 1020
Rated speed rpm	: 860	+ Tolerance 1/min : + 5
guide sleeve		1
travel mm	: 5.34	rack travel mm : 4.00
Tolerance mm	: + 0.25	+ Rated speed rpm : 1080
		+ Tolerance 1/min : + 15
Rated speed rpm	: 580	Total alloc 17 mill
guide sleeve	. 500	Track travel mm : 0.50
travel mm	: 3.68	Tolerance mm : +- 0.50
Tolerance mm	: ← 0.25	Rated speed rpm : 1350
TO LET BEILE MIN		T Nateu speed (piii . 1330
Rated speed rpm	: 1139	†
guide sleeve	40.55	†
travel mm	: 10.00	+

#### LOW IDLE

control lever
position degree : 94.0
tolerance degree : +- 4.0

# Testing:

Rated speed rpm : 425 rack travel mm : 5.00 Tolerance mm : + 0.10

Rated speed rpm : 325

CRT mm min. : > 6.50

Rated speed rpm : 470

#### TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 13.50 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm : 500
Pressure hipa : 900
rack travel mm : 13.50
Tolerance mm : + 0.10

Pressure hPa : Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : + 0.20

#### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 470 rack travel mm : 11.50 Tolerance mm : + 0.20

Pressure hPa : 550 rack travel mm : 12.75 Tolerance mm : + 0.05

#### Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 267.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : +- 7.0

Aneroid pressure

hPa : -Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 181.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 270.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 24.0

# LOW IDLE

Rated speed rpm : 425
Del. quantity

cm3/1000 strokes : 22.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : + 7.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.01.97 Test oil : ISO 4113

Combination No. : 0 402 646 909

Injection pump

Pump designation : PE6P120A320RS7138

: 7.

EP type number : 0 412 626 923

Governor

Governer design. : RQV200...1100PA712

Governer no. : 0 421 813 951

Cust. part No. : 1318819

Customer—spec. information Customer : SCANIA Motor : DSC907

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.30

Check

tolerance \*NW : + 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.15

Tolerance mm : + 0.05

Del. quantity	+ Tolerance
cm3/1000 strokes : 159.0	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
Tolerance	+ cm3/1000s. : +- 4.0
cm3/1000 strokes : +- 1.0	+ Spreed
	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 8.0
cm3/1000s. : +- 4.0	+ Check tolerance
	+ cm3/1000s. : 12.0
Spreed	+
Tolerance	
cm3/1000 strokes : 8.0	+ CONTROL LEVER
Check tolerance	T control lever
cm3/1000s. : 12.0	+ position degree : 60.0
CINO/ IOOO3. i IC.U	
	+ tolerance degree : +- 4.0
	T amount to
- · · · · · · · · · · · · · · · · · · ·	+ control lever
Rated speed rpm : 250	+ position degree : 120.0
	tolerance degree : + 4.0
Rack travel in mm: 5.00	+
Tolerance mm : +- 0.10	+ RATED SPEED
Del. quantity	rack travel mm : 11.15
cm3/1000 strokes : 16.0	Rated speed rpm : 1145
Tolerance	+ Tolerance 1/min : + 5
cm3/1000 strokes : +- 3.0	+ Check
Check tolerance	speed 1/min : + 10
cm3/1000s. : +- 6.0	I speed tright . The to
	T most thought and 1 00
Spreed Talespree	+ rack travel mm : 4.00
Tolerance	+ Rated speed rpm : 1285
cm3/1000 strokes : 4.0	+ Tolerance 1/min : +- 15
Check tolerance	+ Check
cm3/1000s. : 8.0	speed 1/min : +- 20
	rack travel mm : 0.50
(B) SETTING OF INJECTION PUMP	Tolerance mm : + 0.50
WITH GOVERNOR	
ATTH GOVEKNOK	+ Rated speed rpm : 1400
	+
GUIDE SLEEVE POSITION	LOW IDLE
control lever	1
position degree : - 1	- control lever
Rated speed rpm : 1130	,
Deal Americal des entre : 47.50	tolerance degree : +- 4.0
Rack travel in mm : 16.50	T
Tolerance mm : +- 1.30	+ control lever
	+ position degree : 9.0
	+ tolerance degree : +- 4.0
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	+ Testing:
Rated speed rpm : 700	+
Aneroid pressure	+ Rated speed rpm : 250
hPa : 1500	+ rack travel mm : 5.00
Del. quantity	Tolerance mm : + 0.10
cm3/1000 strokes : 159.0	1
UIID/ 1000 SCI UKES . 137.0	Rated speed rpm : 150
	+ Rated speed rpm : 150

CRT mm min. : > 6.50 250 Rated speed rpm TORQUE CONTROL 700

Rated speed rpm 12.15 rack travel mm Tolerance mm : +- 0.05

Rated speed rpm 1100 rack travel mm 12.15 Tolerance mm : **←** 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

500 Rated speed rom Pressure hPa 1500 12.15 rack travel mm : **←** 0.05 Tolerance mm

Pressure hPa 500 Rated speed rpm 10.30 rack travel mm Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm 500 :

Pressure hPa 220 : 10.75 rack travel mm : **←** 0.15 Tolerance mm

350 Pressure hPa 11.55 rack travel mm Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 hPa Rated speed rpm 1100 Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +-4.0

Check tolerance

cm3/1000s.: +-6.0 Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity cm3/1000 strokes : 116.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 4.0

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 10.30 : +- 0.20 Tolerance mm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

250 Rated speed rpm

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s.

: +-6.0 Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s.8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : US.UT.97

: 08.01.97

Combination No. : 0 402 746 630

Injection pump

Pump designation : PES6P130A720LS7422 EP type number : 0 412 736 809

Governor

Governer design. : RQV300...900PA1336

Governer no. : 0 421 814 191

Cust. part No. :

Customer-spec. information

Customer : IVECO-AIFO
Motor : 8217 SRT 10 : 8217 SRI 10.00 Motor

Power KW : 265.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C ÷ + 2.0 Tolerance °C

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity

min. L/h : 200 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm: 12.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing Tolerance

: +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Check

: +- 0.40 tolerance \*NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.05

Tolerance mm	: <b>←</b> 0.05	+ guide sleeve
		+ travel mm : 3.62
Del. quantity		+ Tolerance mm : + 0.25
cm3/1000 strokes	: 245.0	<u>.</u> .
		+ Rated speed rpm : 1220
Tolerance		guide sleeve
cm3/1000 strokes	· +- 15	+ travel mm : 11.50
CIRCI TOOC SCI ONES	• • • • • • • • • • • • • • • • • • • •	Tolerance mm : +- 0.50
Charle dalamana		T roterance mm : += 0.30
Check tolerance		<b>T</b>
cm3/1000s.	: <b>←</b> 5.0	
		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed		†
		+ Rated speed rpm : 900
Tolerance		+ Aneroid pressure
cm3/1000 strokes	: 6.0	+ hPa : 1200
		+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 245.0
cm3/1000S.	: 10.0	+ Tolerance
		+ cm3/1000 strokes : +- 1.5
		Check tolerance
Dakad salas dan	. 700	
Rated speed rpm	: 300	+ Spreed
		+ Tolerance
Rack travel in mm		+ cm3/1000 strokes : 6.0
Tolerance mm	: <del>-</del> 0.10	+ Check tolerance
Del. quantity		+ cm3/1000s. : 10.0
cm3/1000 strokes	: 22.0	<b>+</b>
Tolerance		1
cm3/1000 strokes	· +- 3 N	
Check tolerance		CONTROL LEVER
	: +- 7.0	T CONTROL LEVER
cm3/1000s.	: +- 7.0	T and the same
Spreed		+ control lever
Tolerance		+ position degree : 120.0
cm3/1000 strokes	: 10.0	+ tolerance degree : +- 4.0
Check tolerance		+
cm3/1000s.	: 14.0	+ RATED SPEED
		+ rack travel mm : 11.00
		+ Rated speed rpm : 945
(B) SETTING OF IN	JECTION PUMP	+ Tolerance 1/min : + 5
WITH GOVERNOR		Check
WITTH GOVERNOON		+ speed 1/min : +- 10
		1 opeca (/inti) (0
GUIDE SLEEVE TRAV		rack travel mm : 4.00
GOTHE SPECAS IKAN	EL .	
Dakad amazal	. 050	
Rated speed rpm	: 959	+ Tolerance 1/min : + 15
guide sleeve	7.65	+ Check
travel mm	: 7.98	+ speed 1/min : +- 20
Tolerance mm	: <b>←</b> 0.15	<b>†</b>
		+ rack travel mm : 0.50
Rated speed rpm	: 300	+ Tolerance mm : + 0.50
guide sleeve		Rated speed rpm : 1200
travel mm	: 1.17	+
Tolerance mm		1
501 m 100 mil		1
Rated speed rpm	: 766	l
	. 100	LOW IDLE
guide sleeve	. 5.07	T LOW TOLE
travel mm	5.97	†
Tolerance mm	: <b>←</b> 0.25	†
		+ control lever
Rated speed rpm	: 550	position degree : 79.0
• •		· ·
K18		
****		

tolerance degree	: +- 4.0	† Aneroid pressure
		† hPa : 1200
Testing:		hPa : 1200 Rated speed rpm : 550
_		
Rated speed rpm	300	+ Del. quantity + cm3/1000 strokes : 256.0
rack travel mm Tolerance mm	: 4.60	+ Tolerance
Tolerance mm	: + 0.10	+ cm3/1000 strokes : +- 3.5
		+ Check tolerance
Rated speed rpm	200	+ cm3/1000s. : + 7.0
Marca opeca i piii		1 1,0000.
CRT mm min.	· > 6.05	+ Aneroid pressure
CIVI IMM INTITIO	0.05	T hos
Rated speed rpm	• 365	hPa : - Rated speed rpm : 550 Del. quantity
vared speed thu	. 505	T nateu speeu rpm . 330
TODOLIC CONTROL		
TORQUE CONTROL		+ Tolerance
5-A11		+ cm3/1000 strokes : +- 1.5
Rated speed rpm	: 900	+ Check tolerance
rack travel mm Tolerance mm	: 12.05	- cm3/1000s. : +- 5.0
Tolerance mm	: <b>←</b> 0.05	†
		+
Rated speed rpm rack travel mm Tolerance mm	: 550	+
rack travel mm	: 12.10	+ STARTING FUEL DELIVERY
Tolerance mm	: <b>-</b> 0.10	<del>}</del>
		+ Rated speed rpm : 100
WEROID/ALTITUDE		+ cm3/1000 strokes : 155.0
COMPENSATOR TEST		Tolerance
		+ cm3/1000 strokes : +- 15.0
		+ Check tolerance
SETTING		+ cm3/1000s. : + 19.0
		1
Reted speed rom	• 550	1
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	1200	1
nack traval ma	12 05	
Tolenance mm		LOW IDLE
IOCEI CHILLE IMIII	. , - 0.05	I LOW IDEE
Pressure hPa	• -	Rated speed rpm : 300
Rated speed rpm		+ Del. quantity
rect though	. טעק • סק ס	+ cm3/1000 strokes : 22.0
rack travel mm Folerance mm	, 7.7U	Tolerance
IOCETALLE IMIN	, <del>-</del> 0.10	- cm3/1000 strokes : +- 3.0
AP A CL ID PAPATE		Charle to Laurence
MEASUREMENT		+ Check tolerance + cm3/1000s. : +- 7.0
<b></b>	. reo	+ cm5/1UUUS. : +- /.U
Rated speed rpm	: 550	+ Spreed
		+ Tolerance
Pressure hPa	: 420	+ cm3/1000 strokes : 10.0
rack travel mm	: 10.30	† Check tolerance
Tolerance mm	: <b>←</b> 0.15	+ cm3/1000s. : 14.0
		†
Pressure hPa rack travel mm Tolerance mm	: 450	†
rack travel mm	: 10.85	†
Tolerance mm	: <b>←</b> 0.05	
		+
Start interlock		+ End of test specification sheet
• •		+
		+
		1

FUEL DELIVERY CHARACTERISTICS

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.01.97 Test oil : ISO 4113

Combination No. : F 002 A0Z 048

Injection pump Pump designation : EP type number :

Governor

Governer design. : Governer no. :

Cust. part No. : 3283833

Customer—spec. information Customer : CUMMINS

Motor : 68TA-160/1900

Power KW : 119.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : ← 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : - 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: +- 0.10

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : +- 0.10

Check

tolerance \*NW : + 0.29

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.30 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 119.4

K20

Tolerance cm3/1000 strokes	: +- 1.0	† Tolerance + cm3/1000
		+ Check tol
Check tolerance		+ cm3/1000s
cm3/1000s.	: ← 3.0	+ Spreed
		+ Tolerance
Spr <del>ee</del> d		+ cm3/1000
		+ Check to
Tolerance		+ cm3/1000s
cm3/1000 strokes	: 4.0	+
<b>mt</b>		<u> </u>
Check tolerance		
cm3/1000s.	: 6.5	+ CONTROL I
		— I control
		+ position
Rated speed rpm	: 475	+ tolerance
varen sheen chu	. 4/3	I
Rack travel in mm	: 5.90	T RATED SPI
Tolerance mm	: + 0.10	+ rack tra
Del. quantity		+ Rated sp
cm3/1000 strokes	: 23.5	+ Tolerance
Tolerance		- Total alle
cm3/1000 strokes	: <b>←</b> 2.0	+ rack tra
Check tolerance		+ Rated sp
cm3/1800s.	: - 4.5	+ Tolerance
Spreed		1
Tolerance		+ rack tra
	: 6.0	+ Tolerance
Check tolerance		+ Rated sp
cm3/1000s.	: 8.0	+
		+ rack tra
		+ Rated spe
(B) SETTING OF INJ	JECTION PUMP	+
WITH GOVERNOR		†
		†
		- LOW IDLE
GUIDE SLEEVE POSIT	FTCAL	I LOW IDLE
GOIDE STEENE LOST	11014	I
		I control
control lever		+ position
position degree	: FREE	+ tolerance
Rated speed rpm		<u> </u>
Speed fam	· <del></del>	+ Control
Rack travel in mm	: 0.50	Grad
Tolerance mm	: <b>-</b> 0.20	+ tolerance
		+
governor spring		+ Setting (
pre-tension		+ .
click setting x	: 2.00	+ Rated sp
		+ rack tra
		— † Toleranc
		+
FULL LOAD DELIVERY	A FULL LOAD STOP	<b>1</b> •
		+ Testing:
Rated speed rpm	: 950	+
FULL LOAD DELIVERY Rated speed rpm Ameroid pressure	: 950	+ Rated spe
Rated speed rpm Aneroid pressure hPa		Rated spo
Rated speed rpm Aneroid pressure hPa Del. quantity	: 950 : 850	Testing: Rated speriod rack trav
Rated speed rpm Aneroid pressure hPa	: 950 : 850	Rated s

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 1.0 : ← 3.0 : 4.0 : 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 91.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.30 : 1000 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1075 : ← 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1200
rack travel mm Rated speed rpm	: 4.00 : 1075
LOW IDLE	
control lever position degree tolerance degree	: 76.0 : +- 4.0
Control lever dif	ference : 15.0

: 15.0 e degree : + 6.0 point w/out bumper spring

eed rpm : 475
vel mm : 5.10
e mm : + 0.10

eed rpm : 475 ivel mm : 5.90 ie mm : + 0.10

rack travel mm : Rated speed rpm : 2.00 Tolerance 1/min : +-30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 13.30 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

500 Rated speed rom : Pressure hPa 850

Pressure hPa 500 Rated speed rpm rack travel mm : 9.90 : + 0.10 Tolerance mm

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550 rack travel mm : 12.50 : - 0.20 Tolerance mm

Pressure hPa : 350 rack travel mm : 11.45 Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 75.6

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0 STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm :  $\leftarrow$  0.50 Del. quantity

cm3/1000 strokes : 122.5

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : **←** 15.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 23.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

· · 4.5 cm3/1000s. Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. • 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14.01.97 : ISO 4113

Combination No. : 0 402 798 804

Injection pump

Pump designation : PES8P120A920/4LS7392

EP type number : 0 412 728 813

Governor

Governer design. : RE30

Governer no. : 0 421 890 034

Cust. part No. : 313 GC 5209P2

Customer-spec. information Customer : MACK : EA9-600 Motor

Power KW

: 447.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar

: **←** 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

**K23** 

x inside diameter: 2.0

x length mm :

600

# REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting.

Setting of constant delivery

under Section C.

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm 2.85 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.20

Firing order : 1-2-7-8-4

: - 6- 3

: 0-45-90-135-180 Phasing

: -270-315

Tolerance : +- 0.50

Check

tolerance \*NW : <del>+--</del> 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Barrel no.

: 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point (P, R and H pump)

Uact V : 3.100 CRT mm : 13.00 Tolerance mm : +/- 0.05

Check

tolerance mm : +/- 0.10

Check value (P, R and H pump)

Uact V : 1.700 URT mm : 6.15 Tolerance mm : +/- 0.25

Check

tolerance mm : +/- 0.30

Setting point (M pump)

Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05

Check

tolerance mm : +/- 0.10

Check value (M pump)

Uact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25

Check

tolerance mm : +/- 0.30

Stop position

Uact V : Value with

deenergised adjusting magnet and control rod in

stop position.

CRT mm : 0.75

Tolerance mm

: +/- 0.25

Check

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600

Difference

Amplitude to

Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 900 Uact V : 2.950

Del. quantity

cm3/1000 strokes : 303.0

Tolerance

cm3/1000 strokes : + 1.0

4.0

Check tolerance cm3/1000s. : +-

Spreed

Tolerance

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. : 11.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 625 Uact V : 2.880

Del. quantity

cm3/1000 strokes : 339.5

Tolerance

cm3/1000 strokes : + 5.0

Check tolerance

cm3/1000\$. : +- 8.0

Spreed

Tolerance

cm3/1000 strokes : 12.0

Check tolerance

cm3/1000s. : 16.0

TEST POINT L1

Rated speed rpm : 325 Uact V : 1.340 Tolerance Volt : +- 0.060

Check tolerance

Volt : +- 0.070

Del. quantity

cm3/1000 strokes : 27.0

Tolerance cm3/1000 strokes Spreed	: +-	3.0
Tolerance cm3/2000 strokes Check tolerance	:	0.3
cm3/1000s.	:	12.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.700
Del. quantity		
cm3/1000 strokes	:	185.0
Tolerance		
cm3/1000 strokes	: +-	15.0
Check tolerance		
cm3/1000S.	: +	20.0
Spreed		
Tolerance		
cm3/1000 strokes	:	40.0
Check tolerance		
cm3/1000s.	:	45.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Edition : 14.01.97
Test oil : ISO 4113

: 14.01.97

Combination No. : 0 402 896 310

Injection pump

Pump designation : PES6P130A320RS8522

EP type number : 0 412 936 201

Governor

Governer design. : RE30

Governer no. : 0 421 890 033

Cust. part No. : 309 4435

Customer-spec. information

Customer : CUMMINS Motor : V30

Power KW : 1007.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 3.0

Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 600

**REMARKS** 

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 4.30 Tolerance mm : ← 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm: 12.00 Tolerance mm : + 0.20

Firing order : 1-5-3-6-2-

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 25.00

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

: 10.00 travel

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Folerance mm : + 1.50 Difference \* CS : 6.00 (B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) 3.100 Uact V CRT mm 13.00 : +/- 0.05 Tolerance mm Check tolerance mm : +/- 0.10 Check value (P, R and H pump) : 1.700 : 6.15 Uact V CRT mm Tolerance mm : +/- 0.25 Check tolerance mm : +/-0.30Setting point (M pump) : 3.100 : 12.50 3.100 Uact V CRT mm : +/- 0.05 Tolerance mm Check : +/- 0.10 tolerance mm Check value (M pump) Uact V 1.700 5.50 CRT mm Tolerance mm : +/- 0.25 Check : +/- 0.30 tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in

stop position.

CRT mm : 0.75 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.35 ENGINE-SPEED SENSOR (All P and R pumps not H and M numps) Test with control rod in stop position Engine speed min-1: 60 Amplitude V : 1.4
Tolerance V : +/- 0.6 Check tolerance V : +/- 1.20 Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 Rated speed rpm : 900 Uact V 3.050 Del. quantity cm3/1000 strokes : 425.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. 14.0 FUEL DELIVERY CHARACTERISTICS Rated speed rpm : 750 3.000 Uact V Del. quantity cm3/1000 strokes : 434.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 12.0 Spreed Tolerance cm3/1000 strokes : 16.0

Check tolerance

cm3/1000s.

18.0

# TEST POINT L1

:		400
:		1.280
:	+-	0.060
:	+	0.070
:		49.0
:	+	3.0
:		8.0
:		14.0
	:	•

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.700
Del. quantity		2/0.0
cm3/1000 strokes Tolerance	:	260.0
cm3/1900 strokes		19.0
Check tolerance		19,0
		22.0
cm3/1000s.	: +-	22.0
Spreed		
Tolerance		
cm3/1000 strokes	:	40.0
Check tolerance		50.0
cm3/1000s.	:	50.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 13.01.97 : ISO 4113

Combination No. : F 002 A0Z 008

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1050A00882R

Governer no. : F 002 A20 208

Cust. part No. : 3928598

Customer-spec. information

Customer : CDC Motor

Power KW

: 6BTA : 124.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temo. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

L01

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240

Phasing Tolerance : +- 0.50

Check

: +- 0.75 tolerance \*NW

Start of delivery blocking

\*NW after s.o.d. : 8.50 : +- 0.50 Tolerance

Check

tolerance "NW

: **←** 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1035

Rack travel in mm : 13.00

Tolerance mm :  $\leftarrow$  0.05

L	Aneroid pressure
Del. quantity - cm3/1000 strokes : 112.5	- hPa : 1200 - Del. quantity
	- cm3/1000 strokes : 112.5
Tolerance	- Tolerance - cm3/1000 strokes : +- 1.0
Check tolerance : +- 3.0 -	- Check tolerance - cm3/1000s. : +- 3.0 - Spreed
Spreed -	- Tolerance - cm3/1000 strokes : 3.5
Tolerance	- Check tolerance - cm3/1000S. : 6.0
cm3/1000 strokes : 3.5	-
Check tolerance : 6.0 -	CONTROL LEVER
	control lever
Rated speed rpm : 500 -	position degree : 96.0 tolerance degree : +- 4.0
Rack travel in mm : 5.50	- - RATED SPEED
Tolerance mm : +- 0.10 -	- rack travel mm : 12.00
Del. quantity - cm3/1000 strokes : 20.5 -	- Rated speed rpm : 1095 - Tolerance 1/min : +- 5
Tolerance -	
cm3/1000 strokes : + 2.0	rack travel mm : 6.40
Check tolerance - cm3/1000s. : + 4.5 - Spreed	- Rated speed rpm : 1150 - Tolerance 1/min : +- 5
Tolerance -	rack travel mm : 0.85
cm3/1000 strokes : 3.5 - Check tolerance -	- Tolerance mm : +- 0.55 - Rated speed rpm : 1250
cm3/1000s. : 5.5	- Rated speed rpm : 1250
-	- rack travel mm : 6.40
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- Rated speed rpm : 1150 - - -
	- LOW IDLE
GUIDE SLEEVE POSITION	-
	control lever
control lever - position degree : - 3	position degree : 79.0 tolerance degree : +- 4.0
position degree : - 3 Rated speed rpm : 800	F Coterance degree : +- 4.0
· · · · · · · · · · · · · · · · · · ·	Control lever difference
Rack travel in mm : 0.50 - Tolerance mm : + 0.20 -	- Grad : 17.0 - tolerance degree : +- 6.0
governor spring	Setting point w/out bumper spring
click setting x : 3.00	- Rated speed rpm : 500 - rack travel mm : 5.00
FULL LOAD DELIVERY AT FULL LOAD STOP	- Tolerance mm : + 0.10
	Testing:
Rated speed rpm : 1035	<del> </del>

L02

Rated speed rpm : 500 rack travel mm : 5.50 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1035 rack travel mm : 13.00 Tolerance mm : + 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 1200

Pressure hPa : Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : + 0.20

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 780 rack travel mm : 12.50 Tolerance mm : + 0.20

Pressure hPa : 590 rack travel mm : 11.90 Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity

cm3/1000 strokes : 95.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 120.5

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 20.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.01.97 Edition : ISO 4113 Test oil

Combination No. : F 002 A0Z 022

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1000A0C894R

Governer no. : F 002 A20 216

Cust. part No. : 3931278

Customer-spec. information Customer : CDC Motor : SBT Power KW : 102.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. \*C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar :  $\leftarrow$  1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

rrestroke mm : 2.85
Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Tolerance : 0-60-120-180-240

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00 Tolerance : +- 0.50

Check

tolerance \*NW : **←** 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15

Tolerance mm :  $\leftarrow$  0.05

L04

Del. quantity cm3/1000 strokes	: 102.5	‡
Tolerance cm3/1000 strokes	: + 1.0	Ī
Check tolerance cm3/1000s.	: + 3.0	<u> </u>
Spreed		+
Tolerance cm3/1000 strokes	: 3.5	Ī
Check tolerance cm3/1000s.	: 6.0	- <del> </del>
Rated speed rpm	: 475	+
Rack travel in mm	: 5.60	‡
Tolerance mm Del. quantity	: ÷ 0.10	‡
cm3/1000 strokes Tolerance	: 21.5	<u> </u>
cm3/1000 strokes Check tolerance	: +- 2.0	+
cm3/1000s. Spreed	: <del>+</del> 4.5	Ŧ
Tolerance cm3/1000 strokes	: 3.5	‡
Check tolerance cm3/1000s.	: 5.5	†
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	† † †
GUIDE SLEEVE POSIT	TION	<del>\</del> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
control lever position degree Rated speed rpm	: - 3 : 800	† † † †
Rack travel in mm Tolerance mm	: 0.50 : ← 0.20	Ī
governor spring pre-tension		Ī
click setting x	: 4.00	‡
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	‡
Rated speed rpm	: 1000	Ţ

Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1000 : 102.5 : + 1.0 : + 3.0 : 3.5 : 6.0
CONTROL LEVER	
control lever position degree tolerance degree	: 97.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 11.10 : 1070 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 7.00 : 1120 : +- 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1300
rack travel mm Rated speed rpm	: 7.00 : 1120
LOW IDLE	
control lever position degree tolerance degree	: 80.0 : +- 4.0
Control lever dif Grad tolerance degree	ference : 16.0 : +- 6.0
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm Tolerance mm	: 475 : 5.10 : + 0.10

Testing:

Rated speed rpm rack travel mm Tolerance mm	: 475 : 5.60 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm	: 1000
rack travel mm Tolerance mm	: 12.15 : +- 0.05
Rated speed rpm	
rack travel mm Tolerance mm	: 12.88 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1000
Pressure hPa	
Rated speed rpm rack travel mm	: 500 : 11.30
Tolerance mm	: +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa	
rack travel mm Tolerance mm	: 13.00 : +- 0.20
Pressure hPa	: 480
rack travel mm	: 12.20
Tolerance mm	: +- 0.20
Start interlock	
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	. 1000
hPa Rated speed rpm	: 1000 : 800
Del. quantity cm3/1000 strokes	: 113.0
Tolerance	
cm3/1000 strokes	: +- 2.0

Check tolerance cm3/1000s.	: +-	4.0	
Aneroid pressure hPa Rated speed rpm	•	- 500	
Del. quantity			
cm3/1000 strokes	:	93.0	
Tolerance cm3/1000 strokes	: +-	1.0	
Check tolerance	• -	1.0	
cm3/1000s.	: -	3.0	
STARTING FUEL DEL	IVERY		
Rated speed rpm	:	100	
rack travel mm	:	20.50	
Tolerance mm Del. quantity	: +-	0.50	
cm3/1000 strokes	:	120.5	
Tolerance			
cm3/1000 strokes	: +-	10.0	
Check tolerance cm3/1000s.		15.0	
CIID/ 10003.	• •	15.0	
LOW IDLE			
Rated speed rpm	:	475	
Rated speed rpm Del. quantity	-		
Rated speed rpm Del. quantity cm3/1000 strokes	-	475 21.5	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	-		
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	-	21.5	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	-	21.5	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	-	21.5	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: : +-	21.5 2.0 4.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.01.97 Test oil : ISO 4113

Combination No. : 0 400 074 899

Injection pump

Pump designation : PES4M55C32ORS167 EP type number : 0 410 054 960

Governor

Governer design. : RSF375/1700M69-4 Governer no. : 0 420 021 139

Cust. part No. :

Customer-spec. information Customer : M9-NFZ Motor : 0M6U1-2.3L : 49.0 Power KW

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance \*C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde assembly : 1 688 901 111

Opening pressure

: 148.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

2.0 x inside diameter : x Length mms : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05 Tolerance mm : + G.05 Check : **←** 0.10 tolerance mm

Rack travel in mm : 21.00 Tolerance mm : +- 1.60

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

\*NW after s.o.d. : 15.50 Tolerance  $: \leftarrow 0.20$ Check

tolerance \*NW : +- 0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 37.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance : +- 1.5 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes : 2.5

Charle Aslanana	T
Check tolerance cm3/1000s. : 3.0	SET IDLE CONTROL LEVER POSITION
CHD/ 10005	I SET THE CONTROL LEVER POSTITION
Rated speed rpm : 375	Rated speed rpm : 1000
THE OF SECTION 1	Thatea speed (pill : 1000
Rack travel in mm: 5.60	+ CRT mm max. : 1.45
Tolerance mm : +- 0.10	+
Del. quantity	<u> </u>
cm3/1000 strokes : 6.5	+ LOW IDLE
Tolerance	+
$cm3/1000$ strokes : $\leftarrow$ 0.5	<b>†</b> ·
Spreed	+ control lever
Tolerance	+ position degree : 14.0
cm3/1000 strokes : 1.0	+ tolerance degree : +- 2.0
	Catalan arint refer to the area area.
(b) CETTING OF VALLEGITOR DIMO	+ Setting point w/out bumper spring
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : 375 + rack travel mm : 5.60
MILL GOVERNOR	T rack travet mm : 5.60
	F SET IDLE AUXILIARY SPRING
IDLE STAGE	ACT TAFE MONTETAKT DILYTIAG
	- Rated speed rpm : 420
	+ rack travel mm : 4.50
Rack travel in mm: 6.25	+ Tolerance mm : +- 0.10
Tolerance mm : + 0.25	+
	+ rack travel mm : 3.00
	+ Rated speed rpm : 630
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance 1/min : + 50
	+
Rated speed rpm : 1000	+ Load pick-up
Ref. pressure	+
ALDA / ADA hPa : 1100	+ Rated speed rpm : 250
Del. quantity	rack travel mm : > 10.20
cm3/1000 strokes : 37.5	<b>†</b>
Tolerance	+ Rated speed rpm : 1000
cm3/1000 strokes : +- 0.5 Check tolerance	† CRT mm max. : 1.45
cm3/1COOS, : +- 1.5	+ CRT mm max. : 1.45
Spreed	Frack travel mm : 5.60
Tolerance	Rated speed rpm : 375
cm3/1000 strokes : 2.5	T Rated speed (pin . 37)
Check tolerance	
cm3/1000s. : 3.0	
	+ TORQUE CONTROL
	+
RATED SPEED	+ Rated speed rpm : 1000
	+ rack travel mm : 12.35
	Tolerance mm : +- 0.05
control lever	†
position degree : 50.0	+ Rated speed rpm : 1400
D. A d	rack travel mm : 12.10
Rated speed rpm : 1800	Tolerance mm : + 0.15
rack travel mm : 9.25 Tolerance mm : +- 0.25	Pated speed and 1450
roterance mm : T U.23	+ Rated speed rpm : 1650
Rated speed rpm : 2300	+ rack travel mm : 11.85 + Tolerance mm : +- 0.15
rack travel mm : 0.50	
Tolerance mm : + 0.50	Rated speed rpm : 500
	rack travel mm : 11.75
	1 - main or made limit 1 - 11012

		+ Ref. pressure
		- 🕂 ALDA / ADA hPa : 1100
ADJUSTMENT TEST A	DA/ALDA	Rated speed rpm : 500
SETTING		+ Del. quantity + cm3/1000 strokes : 33.3
		† Tolerance
Rated speed rpm	: 1000	+ cm3/1000 strokes : ← 0.8
Ref. pressure	050	+ Check tolerance
ALDA / ADA hPa		+ cm3/1000s. : + 1.8
rack travel mm Tolerance mm	: −0.10 : ← 0.10	+ Tolerance + cm3/1000 strckes : 2.5
TOTEL GITCE IMA	0.10	Check tolerance
MEASUREMENT		+ cm3/1000s. : 3.0
Pated speed nos	: 1000	<u>†</u>
Rated speed rpm Ref. pressure	: 1000	· I
ALDA / ADA hPa	: 900	T HIGH IDLE
rack travel mm	: -0.60	+
Tolerance mm	: +- 0.10	Ref. pressure
_		1 ALDA / ADA has . 1100
Ref. pressure	700	Rated speed rpm : 1800 - rack travel mm : 9.25
ALDA / ADA hPa		rack travel mm : 9.25
rack travel mm	: -2.00 : +- 0.20	+ Tolerance mm : +- 0.25
Tolerance mm	: + 0.20	+ Del. quantity + cm3/1000 strokes : 31.0
		Tolerance
<del></del>		- + cm3/1000 strokes : + 2.0
FUEL DELIVERY CHA	RACTERISTICS	+ Check tolerance
		+ cm3/1000s. : $+$ 3.0
Ref. pressure	. 4400	Spreed
ALDA / ADA hPa Rated speed rpm		+ Tolerance + cm3/1000 strokes : 2.5
Del. quantity	. 1400	Check tolerance
cm3/1000 strokes	: 37.3	+ cm3/1000s. : 3.0
Tolerance		+
cm3/1000 strokes	: +- 0.8	
Check tolerance		+ STARTING FUEL DELIVERY
cm3/1000s.	: +- 1.8	.+
Spreed		+ Rated speed rpm : 100 + rack travel mm : > 20.10
Tolerance cm3/1000 strokes	: 2.5	+ rack travel mm : > 20.10 + Del. quantity
Check tolerance		- cm3/1000 strokes : 52.0
cm3/1000s.	: 3.0	+ Spreed
	- · -	† Tolerance
Ref. pressure		+ cm3/1000 strokes : 6.0
ALDA / ADA hPa	: 1100	+ Check tolerance
Rated speed rpm Spreed	: 1650	- cm3/1000s. : 6.0
Del. quantity		<del> </del>
cm3/1000 strokes	: 38.0	+
Tolerance		
cm3/1000 strokes	: <del></del> 1.0	+ LOW IDLE
Check tolerance	20	Detail annual new 277
cm3/1000s.	: <b>←</b> 2.0	Rated speed rpm : 375
Spreed Tolerance		+ Del. quantity + cm3/1000 strokes : 7.8
	. 25	+ Check tolerance
cm3/1000 strokes Check tolerance	: 2.5	+ Check tolerance + cm3/1000s. : +- 2.3

Check tolerance

cm3/1000s. : 1.5

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever

position degree : 14.0 tolerance degree : - 2.0

Rated speed rpm : 425

Rack travel in mm : 7.80 Tolerance mm : + 0.80

Tolerarice

cm3/1000 strokes : + 3.5

Check tolerance cm3/1000s. : +- 4.5 Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.01.97 Test oil : ISO 4113

Combination No. : 0 400 075 943

Injection pump

Pump designation : PES5M55C32ORS168 EP type number : 0 410 055 978

Governor

Governer design. : RSF350/1700M69-5 Governer no. : 0 420 021 147

Cust. part No. :

Customer—spec. information Customer : MB-NFZ : 0M6O2-2.9l Motor

: 62.0 Power KW

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : ← 2.0 Tolerance \*C

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

Start of delivery blocking

\*NW after s.o.d. : 15.50 Tolerance :  $\leftarrow$  0.20

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.30

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 37.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s.

: +-1.5

Spreed Tolerance

cm3/1000 strokes : 2.5

Check tolerance	
cm3/1000s. : 3.0	
+	SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 350	Rated speed rpm : 1000
Rack travel in mm: 5.60	Rated Speed Ppill . 1000
Tolerance mm : + 0.10	CRT mm max. : 1.45
Del. quantity	
cm3/1000 strokes : 6.5	LOUITNIE
cm3/1000 strokes : +- 0.5	LOW IDLE
Spreed	
Tolerance	control lever
cm3/1000 strokes : 1.0	position degree : 14.0
1	tolerance degree : +- 2.0
(B) SETTING OF INJECTION PUMP	Setting point w/out bumper spring
WITH GOVERNOR	Rated speed rpm : 350
+	rack travel mm : 5.60
IN F OTAGE	CET TALE AUVIL TARY CARTING
IDLE STAGE	SET IDLE AUXILIARY SPRING
4	Rated speed rpm : 380
Rack travel in mm: 6.25	rack travel mm : 4.50
Tolerance mm : + 0.25	Tolerance mm : +- 0.10
	rack travel mm : 3.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Reted speed rpm : 579
+	Tolerance 1/min : +- 50
Rated speed rpm : 1000	
Ref. pressure	Load pick-up
ALDA / ADA hPa : 1100	Datad aread mm . 250
Del. quantity + cm3/1000 strokes : 37.5 +	Rated speed rpm : 250 rack travel mm :> 9.20
Tolerance	TOOK CLUVEE HAM
cm3/1000 strokes : + 0.5	Rated speed rpm : 1000
Check tolerance	4.45
cm3/1000s. : +- 1.5 +-	CRT mm max. : 1.45
Tolerance +	rack travel mm : 5.60
cm3/1000 strokes : 2.5	Rated speed rpm : 350
Check tolerance	
cm3/1000s. : 3.0	
	TORQUE CONTROL
RATED SPEED	
+	Rated speed rpm : 1000_
	rack travel mm : 12.35 Tolerance mm : + 0.05
control lever position degree : 50.0 +	Tolerance mm : +- U.U5
position degree : 30.0	Rated speed rpm : 1400
Rated speed rpm : 1800	rack travel mm : 12.10
rack travel mm : 9.25	Tolerance mm : + 0.15
Tolerance mm : + 0.25	Detail and a 4/50
Detect aread was a 2700	Rated speed rpm : 1650
Rated speed rpm : 2300 +	rack travel mm : 11.85 Tolerance mm : +- 0.15
rack travel mm : 0.50 Tolerance mm : + 0.50	
+	Rated speed rpm : 500
+	rack travel mm : 12.10

ance mm	: +- 0.10	‡	Ref. pressure	
TMENT TEST /	ADA/ALDA		ALDA / ADA hPa Rated speed rpm	: 1100 : 500
NG		‡	Del. quantity cm3/1000 strokes	: 34.
peed rpm	: 1000	<u> </u>	Tolerance cm3/1000 strokes	
sure A hPa		+	Check tolerance cm3/1000s.	: + 1.8
el ma	: 70.10	Ŧ	Tolerance	
m/A	: <b>←</b> 0.10	‡	cm3/1000 strokes Check tolerance	
T		‡	cm3/1000s.	: 3.0
ed rpm sure	: 1000	. 1	****	<del></del>
\ hPa	: 900	+	HIGH IDLE	
il mm mm	: −0.60 ; ← 0.10	‡	Ref. pressure	
sure		‡	ALDA / ADA hPa Rated speed rpm	
A hPa		+	rack travel mm	: 9.25
elmm mm	: -2.00 : +- 0.20	1	Tolerance mm Del. quantity	: ← 0.25
*****	0.25	$\frac{1}{1}$	cm3/1000 strokes Tolerance	: 31.0
FDV 611	A D A CT CD T D T T C C		cm3/1000 strokes	: +- 2.0
	ARACTERISTICS	‡	Check tolerance cm3/1000s.	: + 3.0
iure NhPa	: 1100	+	Spreed Tolerance	
d rom	: 1400	Ī	cm3/1000 strokes	: 2.5
city		+	Check tolerance	
	: 37.3	‡	cm3/1000s.	: 3.0
strokes erance	: + 0.8	1	STARTING FUEL DEL	TVERY
, and	: +- 1.8	1	OTANTING TOLL DEL	
		†	Rated speed rpm rack travel mm	: 100 : > 20.10
strokes	: 2.5	Ţ	Del. quantity	. > 20.10
rance	: 3.0	†	cm3/1000 strokes Spreed	: 52.0
	. 5.0	Į	Tolerance	
sure	4400	+	cm3/1000 strokes	: 6.0
A hPa ed rpm	: 1100 : 1650	Ĭ	Check tolerance cm3/1000s.	: 6.0
ity		1		
trokes	: 38.0	Ţ		
strokes	: +- 1.0	<b>1</b>	LOW IDLE	
erance		+		. 750
•	: +- 2.0	‡	Rated speed rpm Del. quantity	: 350
strokes	: 2.5	‡	cm3/1000 strokes Check tolerance	: 7.8
rance		+	cm3/1000s.	: + 2.3
	: 3.0	+	Spreed	

Check tolerance cm3/1000S. : 1.5

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever

position degree : 14.0 tolerance degree : + 2.0

Rated speed rpm : 400

Ruck travel in mm: 6.40 Tolerance mm : ← 0.80

Del. quantity

cm3/1000 strokes : 10.5 Tolerance

cm3/1000 strokes : +- 3.5

Check tolerance

cm3/1000s. : +- 4.5 Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 350 Vacuum hPa : -450.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.01.97 Edition Test oil : ISO 4113

Combination No. : 0 402 616 804

Injection pump

Pump designation : PE6P12UA3OURS7289 EP type number : 0 412 626 883

Governor

Governer design. : Governer no.

Cust. part No. : 866145-P04 v. 11/96

Customer-spec. information Customer : PENTA : TAD 1030 G Motor

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration Camper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C Tolerance \*C

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.45
Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240
Tolerance : +- 0 20

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.50 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 361.0

Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	; <del>+</del> 4.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 10.0
Rated speed rpm	: 300
Rack travel in mm Tolerance mm Del. quantity	: 8.00 : +- 0.20
cm3/1000 strokes Tolerance	: 23.0
cm3/1000 strokes Check tolerence	: <b>←</b> 3.0
cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 7.0
Check tolerance cm3/1000s.	: 11.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 700
hPa Del. quantity	: -
cm3/1000 strokes Tolerance	: 361.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 10.0

Testing:

Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : + 0.20

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 15.50 Tolerance mm : + 0.05

Start interlock

LOW IDLE

Rated sneed rpm : 300
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000s. : 11.0

End of test specification sheet

LOW IDLE

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.01.97 Test oil : ISO 4113

Combination No. : 0 402 648 782

Injection pump

Pump designation : PE8P120A32ULS7906 EP type number : 0 412 628 921

Governor

Governer design. : RQV300...1050PA1325

Governer no. : 0 421 814 188

Cust. part No. : 04222 3940 KY

Customer-spec. information

Customer : KHD

Motor : BF8M1015/C Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : ← 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 230 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 8-7-2-6-5

: - 3- 1

Phasing : 0-45-90-135-180

: −270−315 : + 0.30

Tolerance :  $\leftarrow$  0.

Check

tolerance \*NW :  $\leftarrow$  0.50

Start of delivery blocking

\*NW after s.o.d. : 315.00 Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

\_\_\_\_\_

		•
Rack travel in mm Tolerance mm	: 13.60 : + 0.05	Rated specified
Del. quantity cm3/1000 strokes	: 350.0	Toleran
Tolerance cm3/1000 strokes	: + 1.0	Rated specified
Check tolerance cm3/1000s.	: + 4.0	_
Spreed	<del></del>	_ + guide s + travel : + Toleran
Tolerance cm3/1000 strokes	: 6.0	<b>†</b>
Check tolerance cm3/1000s.	: 9.0	_ + GUIDE S
		+ control + positio + Rated s
Rated speed rpm	: 300	Rack tr
Rack trevel in mm Tolerance mm	: 4.60 : + 0.10	Toleren
Del. quantity cm3/1000 strokes Tolerance	: 23.0	FULL LO
cm3/1000 strokes Check tolerance		+ Rated s + Arieroid
cm3/1000s. Spreed Tolerance	: +- 6.0	+ hPa + Del. qu + cm3/100
cm3/1000 strokes Check tolerance	: 8.0	Toleran cm3/100
cm3/1000s.	: 12.0	+ Check to + cm3/100
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	+ Spreed + Toleran + cm3/100 + Check t
GUIDE SLEEVE TRAV	EL	- + cm3/100
Rated speed rpm guide sleeve		CONTROL
travel mm Tolerance mm	: 10.02 : ← 0.15	control
Rated speed rpm guide sleeve	: 300	+ positio + toleran
travel mm Tolerance mm	: 1.24 : + 0.20	+ RATED S + rack tr
Rated speed rpm guide sleeve	: 860	+ Rated s + Toleran
travel mm Tolerance mm	: 5.59 : + 0.25	rack tr Rated s

Rated speed rpm guide sleeve travel mm	: 560 : 3.24 : +- 0.25
Tolerance min  Rated speed rpm	
guide sleeve travel mm	: 12.00
Tolerance ma	: +- 0.25
Rated speed rpm guide sleeve	
travel mm Tolerance mm	: 13.50 : + 0.50
GUIDE SLEEVE POSI	TION
control lever	
position degree Rated speed rpm	: - 1 : 1120
Rack travel in mm Toleranse mm	: 12.60 : + 1.30
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Arieroid pressure	: 1050
hPa Del. quantity	: 1700
cm3/1000 strokes Tolerance	: 350.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000S. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 9.0
CONTROL LEVER	
control lever	404.0
position degree tolerance degree	: 121.0 : ← 4.0
RATED SPEED rack travel mm	: 12.60
Rated speed rpm	: 1085
Tolerance 1/min	: +- 5
rack travel mm Rated speed rpm	: 4.00 : 1135
•	

Tolerance 1/min : +- 15 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300 LOW IDLE control lever position degree : 75.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 300 rack travel mm : 4.60 Tolerance mm : - 0.10 Rated speed rpm : 200 CRT mm min. : > 6.10 Rated speed rpm: : 345 TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 13.60 Tolerance mm : +- 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 400 Rated speed rpm : Pressure hPa : 1700 rack travel mm : 13.60 Tolerance mm : + 0.05 Pressure hPa 400 Rated speed rpm : rack travel mm : 8.30 : **←** 0.20 Tolerance mm MEASUREMENT

Pressure hPa : 1100 rack travel mm : 12.50 Tolerance mm : + 0.05 Start interlock FUEL DELIVERY CHARACTERISTICS Aneroid pressure Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 240.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 8.30
Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 135.0 Tolerance cm3/1000 strokes :  $\leftarrow$  20.0 Check tolerance cm3/1000s. : +- 24.0 LOW IDLE Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance : <del>←</del> 6.0 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

End of test specification sheet

Rated speed rpm : 400

Pressure hPa : 570 rack travel mm : 9.90

Tolerance mn:  $\leftarrow$  0.10

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.05.96 Edition Test oil : ISO 4113

Combination No. : 0 402 698 806

Injection pump

Pump designation : PESP120A720LS7531 EP type number : 0 412 628 896

Governor

Governer design. : RE30

Governer no. : 0 421 890 022

Cust. part No. : 1362097

Customer-spec. information Customer : SCANIA

: DSC1409, DSC1416 Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : ← 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

# REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting.

Setting of constant delivery

under Section C.

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 5.05 : ← 0.05 Prestroke mm Tolerance mm Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : <del>+-</del> 1.50

: 1-2-7-3-4 Firing order

: - 6- 8

: 0-45-90-135-180 Phasing

> : -270-315 : +- 0.50

Check

Tolerance

tolerance 'NW :  $\leftarrow$  0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Vibration

damoer

(RoBo diaphragm) : 3.2

(B) POSITIONER TESTING Warm-up time: 3 minutes at r=600 min-1, Uact = 2.5 V TESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) Uact V 3.100 CRT mm 13.00 Tolerance mm : +/- 0.05 Check : +/- 0.10 tolerance mm Check value (P, R and H pump) Uact V 1.700 CRT mm 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30 Setting point (amua M) Uact V 3.100 12.50 CRT mm Tolerance mm : +/- 0.05 Check : +/- 0.10 tolerance mm Check value (M pump) 1.700 Uact V CRT mm 5.50 Tolerance mm : +/- 0.25 Check : +/- 0.30 tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in stop position. 0.75

: +/- 0.25

: +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod

in stop position

Engine speed min-1: 60 Amplitude V : 1.4 Tolerance V : +/- 0.6

Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference

Amolitude to Amplitude V : max.1.4

# (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm 700 3.000 Uact V Del. quantity cm3/1000 strokes : 248.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s.: +-4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.12.0

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm 950 Uact V 3.000 Del. quantity cm3/1000 strokes : 224.0 Tolerance cm3/1000 strokes : +-Check tolerance cm3/1000s. : +- 6.0

### TEST POINT L1

250 Rated speed rpm Uact V 1.410 Tolerance Volt : + 0.060Check tolerance : + 0.060 Volt Del. quantity cm3/1000 strokes : 16.0

CRT mm

Check

Tolerance mm

tolerance mm

Tolerance

cm3/1000 strokes : + 3.0

Spreed

4.0

Tolerance cm3/1000 strckes : Check tolerance cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.01.97 Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump

Fump designation : PES6P120A12CRS739C EP type number : 0 412 726 945

Governor

Governer design. : RQV350...1100PA1244K

Governer no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec, information

Customer : CUMMINS Motor : 6CTAA Motor

: 6CTAA

Power KW

: 179.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: 40 : ← 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 90 Tolerance L/h : ← 10.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

L23

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240Tolerance :  $\leftarrow 0.30$ 

Check

tolerance \*NW : +- 0.50

Start of delivery blocking

\*NW after s.o.d. : 7.70 Tolerance : + 0.10

Check

: +~ 0.75

tolerance \*NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 13.70

Tolerance mm	: <b>←</b> 0.05	+ guide sleeve
		+ travel mm : 4.28
Del. quantity		+ Tolerance mm : + 0.25
cm3/1000 strokes	: 173.0	1
		+ Rated speed rpm : 1380
Tolerance		guide steeve
cm3/1000 strokes	10	T guide steeve
cms/ luou strokes	: — 1.0	+ travel mm : 13.50
		+ Tolerance mm : + 0.50
Check tolerance		+
cm3/1000s.	: <del>←</del> 4.0	
		+ GUIDE SLEEVE POSITION
Spreed		1
-,6:		1
Tolerance		+ control lever
cm3/1000 strokes	: 5.0	
cm3/1000 strokes	; 5.0	+ position degree : - 1
	-	+ Rated speed rpm : 1195
Check tolerance		+
cm3/1000s.	: 9.0	+ Rack travel in mm : 12.00
		→ Tolerance mm : ← 2.00
		1
Dated speed an-	: 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	. 370	T FULL LUMD DELIVERY AT FULL LUMD STOP
		T 201 1 202
Rack travel in m		+ Rated speed rpm : 1100
Tolerance mm	: <b>←</b> 0.10	+ Aneroid pressure
Del. quantity		+ hPa : 1500
cm3/1000 strokes	: 18.0	+ Del. quantity
Tolerance		- cm3/1000 strokes : 173.0
cm3/1000 strokes	: <del></del> 3.0	Tolerance
	. +- 5.0	1
Check tolerance		+ cm3/1000 strokes : + 1.0
cm3/1000s.	: <del>←</del> 5.0	+ Check tolerance
Spreed		+ cm <sup>3</sup> /1000s. : + 4.0
Tolerance		+ Spreed
cm3/1000 strokes	: 7.0	+ Tolerance
Check tolerance		- cm3/1000 strokes : 5.0
cm3/1000s.	: 11.0	+ Check tolerance
Cm5/ 10005.	. 11.0	
		+ cm3/1000s. : 9.0
		†
(B) SETTING OF I	NJECTION PUMP	+
WITH GOVERNOR		+
		+ CONTROL LEVER
<del></del>		+
GUIDE SLEEVE TRA	VEL	+ control lever
		position degree : 68.0
Rated speed rpm	: 1159	tolerance degree : + 4.0
	• 1137	T total alice dayled 4.0
guide sleeve	. 10.27	T annual laws
travel mm	: 10.27	+ control lever
Tolerance mm	: <b>←</b> 0.15	position degree : 122.0
		+ tolerance degree : +- 4.0
Rated speed rpm	: 350	+
guide sleeve		RATED SPEED
travel mm	: 1.93	+ rack travel mm : 12.70
	: +- 0.20	Rated speed rpm : 1145
Tolerance mm	. T- U.ZU	
	740	Tolerance 1/min : + 5
Rated speed rpm	: 710	†
guide sleeve		+ rack travel mm : 4.00
travel mm	: 5.79	Rated speed rpm : 1240
Tolerance mm	: + 0.25	+ Tolerance 1/min : + 15
	- <del> </del>	+ Check
Dated aread are	: 420	speed 1/min : + 20
Rated speed rpm	: 420	T sheen willing : co

rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1350
LOW IDLE	
control lever position degree tolerance degree	
control lever position degree tolerance degree	: 20.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.60 : + 0.10
Rated speed rpm	: 250
CRT mm min.	: > 7.50
Rated speed rpm	: 350
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 13.70 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.85 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.95 : ← 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	**************************************
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700 : 1500 : 13.85 : +- 0.10
Pressure hPa Rated speed rpm	: - : 700

).40 ).20
10
0 .70 1.20
0 .30 .05
100 290
80
300
STICS
)0 )0
00 00 71.0
10
00 21.0
00 71.0 3.0
00 71.0 3.0
00 21.0 3.0 6.0
00 21.0 3.0 6.0 8.0
00 21.0 3.0 6.0 8.0
00 71.0 3.0 6.0 8.0 2.0
00 71.0 3.0 6.0 8.0 2.0
1 0

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity cm3/1000 strokes	:	190.0
Tolerance cm3/1000 strokes	: +-	20.0

Check tolerance cm3/1000s. : + 24.0

# LOW IDLE

Rated speed ipm : 350
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000 strokes : 7.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

Test oil : ISO 4113

Combination No. : 0 402 746 883

Injection pump

Pump designation : PESSP110A320RS7198 EP type number : 0 412 716 802

Governor

Governer design. : RQV275...1250PA942K

Governer no. : 0 421 815 234

Cust. part No. : CCEP 5097A

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDR 06.02.26 L

Power KW

: 132.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.65 Tolerance mm : + 0.05

Check

: ← 0.10 tolerance mm

Rack travel in mm : 13.00

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5- 3- 6- 2-

rnasing : 0-60-120-180-240 Tolerance : +- 0 30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

: + 0.75

tolerance \*NW

Barrel no.

: 1

CRT ZERO POSITION

Rack travel in mm : 14.65

Tolerance mm : +- 0.05

BASIC SETTING

Rated speed rpm : 1250	Tolerance cm3/1000 strokes : + 1.0
Del. quantity cm3/1000 strokes : 158.0	
Tolerance cm3/1000 strokes : → 1.0	Tolerance cm3/1000 strokes : 4.0 Check tolerance
Check tolerance cm3/1000s. : + 3.5	+ cm3/1000s. : 7.5
Spreed	CONTROL LEVER
Tolerance cm3/1000 strokes : 4.0	control lever position degree : 114.0 tolerance degree : + 4.0
Check tolerance : 7.5	RATED SPEED  rack travel mm : -1.00 Rated speed rpm : 1320 Tolerance 1/min : +- 5
Rated speed rpm : 275 Del. quantity cm3/1000 strokes : 19.5 Tolerance cm3/1000 strokes : + 2.5	rack travel mm : -10.65 Rated speed rpm : 1490 Tolerance 1/min : +- 15
Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance	rack travel mm : -14.15 Tolerance mm : + 0.55 Rated speed rpm : 1600
cm3/1000 strokes : 4.5 Check tolerance	+
cm3/1000s. : 7.5	TOM TOPE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 62.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Testing:
control lever	Rated speed rpm : 200
position degree : - 1 Rated speed rpm : 1385	CRT mm max. : < -8.90
Rack travel in mm : 13.60	+ Rated speed rpm : 415
Tolerance mm : + 1.30	TORQUE CONTROL
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1250
Rated speed rpm : 1250 Aneroid pressure	Rated speed rpm : 750 rack travel mm : -0.80
hPa : 1000 Del. quantity	Tolerance mm : +- 0.10
cm3/1000 strokes : 158.0	Rated speed rpm : 750 rack travel mm : -5.60

Tolerance mm	: +- 0.10	+ Del. quantity	
roter ance min	0.10	cm3/1000 strokes	s : 62.fl
Rated speed rpm	: 750	+ Tolerance	. 32.3
rack travel mm	: -8.00	+ cm3/1000 strokes	s : <del>+-</del> 5.0
Tolerance mm	: <b>←</b> 0.10	+ Check tolerance	
		+ cm3/1000s.	: +- 8.0
<del></del>	<del></del>		
ANEROID/ALTITUDE		+ Tolerance	
COMPENSATOR TEST		+ cm3/1000 strokes	s : 8.0
		***************************************	_
SETTING		+ Aneroid pressure	
DE LITING		Rated speed rpm	• 750
Rated speed rpm	: 1250	+ Del. quantity	. 750
Pressure hPa		+ cm3/1000 strokes	s : 39.0
	• • • • • • • • • • • • • • • • • • • •	+ Tolerance	
Pressure hPa	: -	+ cm3/1000 strokes	s : <del></del> 5.0
Pressure hPa Rated speed rpm	: 1250	+ Check tolerance	
rack travel mm	: -3.40	+ cm3/1000s.	
rack travel mm Tolerance mm	: <b>←</b> 0.20	Spreed	
		+ Tolerance	
MEASUREMENT		+ cm3/1000 strokes	s : 8.0
	4050	†	
Rated speed rpm	: 1250	+ Aneroid pressure	•
D=====================================	. 220	+ hPa	: - -
Pressure hPa	: 220	+ Rated speed rpm	500
rack travel mm	: -2.60 : +- 0.20	+ Del. quantity + cm3/1000 strokes	
Tolerance mm	; +- 0.20	+ Tolerance	68.0
Pressure hPa	: 360	+ cm3/1000 strokes	10
rack travel mm		Check tolerance	
Tolerance mm		cm3/1000s.	
TOTAL MILE	0.05		• • 5.5
Start interlock		†	
Rated speed rpm	: > 150	STARTING FUEL DE	ELIVERY
Rated speed rpm	: < 200	+	
		+ Rated speed rpm	: 100
Check		+ Del. quantity	
speed 1/min	: > 130	+ cm3/1000 strokes	
Check		+ Tolerance	
speed 1/min	: < 220	+ cm3/1000 strokes	s : <del>+-</del> 15.0
		+ Check tolerance	
			: <del></del> 19.0
FUEL DELIVERY CHA	ARACTERISTICS	†	
Aneroid pressure		I	
hPa	: 1000	<u> </u>	·
Rated speed rpm		LOW IDLE	
Del. quantity	. ,,,,,	1	
cm3/1000 strokes	: 127.0	+ Rated speed rpm	: 275
Tolerance		+ Del. quantity	- · · -
cm3/1000 strokes	: <b>←</b> 2.0	+ cm3/1000 strokes	s : 19.5
Check tolerance		+ Tolerance	
cm3/1000s.	: <b>←</b> 5.0	+ cm3/1000 strokes	s : <del>+-</del> 2.5
		+ Check tolerance	
Aneroid pressure		+ cm3/1000s.	: <del></del> 5.0
hPa	:	+ Spreed	
Rated speed rpm	: 750	+ Tolerance	
		+ cm3/1000 strokes	s: 4.5

Check tolerance cm3/1000s.	:	7.5	
***************************************	<del></del>		

#### Work Pemarks

to Service Info for test and adjustment instructions. See microcard(s) W40G/...

Edition Test oil

: 18,12,96 : ISO 4113

Combination No. : 0 402 795 202

Injection pump

Pump designation : PES5H120/720/3LS1002

EP type number

: 0 412 725 202

Governor

Governer design. : RE33

Governer no.

: O 421 890 362

Cust. part No. : 51.111103-7408

Customer-spec. information

Customer

: MAN

Motor

: D 2865 LUH 07

Power KW

: 228.0

#### TEST BENCH REQUIREMENTS

Inlet line

: 4.1

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 2 417 413 073

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm :

3.0

600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +-

9.99 Prestroke mm

Tolerance mm

: + - 0.05

Check

tolerance mm

: **←** 0.10

Rack travel in mm : 10.50

Tolerance mm : + 0.50

Firing order : 1-3-5-4-2

: 0-72-144-216-288

Phasing Tolerance

: +- 0.30

Check

tolerance "NW

: + 0.75

# Start of delivery blocking

Tolerance

: + - 0.50

Check

tolerance \*NW

: **←** 0.75

Barrel no.

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0	+ Amplitude V : 1.4 + Tolerance V : +/- 0.6
Setting point (P, R and H pump)	+ Check + tolerance V : +/- 1.20
Uact V : 3.100	Engine speed min-1: 600
CRT mm : 13.00	+ Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check	+ Amplitude V : max.1.4
tolerance mm : +/- 0.10	+
Check value	<u> </u>
(P, R end H pump)	(C) INJECTION PUMP WITH POSITIONER
a, , a. a (randa.	
	+ TEST POINT V1
Uact V : 1.700	+
CRT mm : 6.15	+ Rated speed rpm : 750
Tolerance mm : +/~ 0.25	+ Wact V : 3.350
Check	+ Prestroke solenoid
tolerance mm : +/- 0.30	† Stroke mm : 10.00
	+ Del. quantity
	+ cm3/1000 strokes : 332.0
Setting point	+ Tolerance
(M pump)	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
Uact V : 3.100	+ cm3/1000s. : +- 4.0
CRT nem : 12.50	+ Spreed
Tolerance mm : +/- 0.05	+ Tolerance
Check	+ cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	+ Check tolerance
-l l l	+ cm3/1000s. : 9.0
Check value	FUEL DELIVERY GUARACTERTOTTES
(M pump)	FUEL DELIVERY CHARACTERISTICS
Uact V : 1.700	Rated speed rpm : 1000
CRT mm : 5.50	+ Uact V : 3.290
Tolerance mm : +/- 0.25	Prestroke solenoid
Check	+ Stroke mm : 8.00
tolerance mm : +/- 0.30	+ Del. quantity
	+ cm3/1000 strokes : 309.0
Stop position	+ Tolerance
. ,	+ cm3/1000 strokes : +- 4.0
Uact V : Value with	+ Check tolerance
deenergised adjusting magnet	+ cm3/1000s. : $+$ 8.0
and control red in	+ Spreed
stop position.	+ Tolerance
CRT mm : 0.75	+ cm3/1000 strokes : 8.0
Tolerance mm : +/- 0.25	+ Check tolerance
Check	+ cm3/1000s. : 12.0
tolerance mm : +/- 0.35	† Detail aread are
	+ Rated speed rpm : 500
ENCINE_COEEN CENICAD	+ Uact V : 2.900 + Prestroke solenoid
ENGINE-SPEED SENSOR	+ Stroke mm : 9.20
(All P and R pumps not H and M pumps)	+ Del. quantity
n allu n haithe	+ cm3/1000 strokes : 304.0
Test with control rod	+ Tolerance
in stop position	+ cm3/1000 strokes : +- 4.0
III stop position:	+ Check tolerance
Engine speed min-1: 60	+ cm3/1000s. : +- 8.0
engine speed with the se	• • • • • • • • • • • • • • • • • • • •

M04

Spre <del>ed</del> Toler <b>a</b> nce				
cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:	1	2.0	
Rated speed rpm	•		00	
Uact V Prestroke solenoid	: d		100	
Stroke mm Del. quantity	:		3.20	
cm3/1000 strokes Tolerance	:	16	8.0	
cm3/1000 strokes Check tolerance	:	+	4.0	
cm3/1000s. Spreed	:	+	8.0	
Tolerance cm3/1000 strokes	:		8.0	
Check tolerance cm3/1000s.	•	4	2.0	
	•	75		
Rated speed rpm Uact V			450	
Prestroke solenoic Stroke mm	а :	10	0.00	
Del. quantity cm3/1000 strokes	:	ć	55.0	
Tolerance cm3/1000 strokes	:	+-	4.0	
Check tolerance cm3/1000s.	:	+-	8.0	
TEST POINT L1				
Rated speed rpm	:		00 .520	
Uact V Tolerance Volt	:	+- ó.		
Check tolerance		<b>←</b> 0.	.060	
Prestroke solenoid Stroke mm	d :	7	2.20	
Del. quantity cm3/1000 strokes	:	3	<b>30.0</b>	
Tolerance cm3/1000 strokes	:	+-	3.0	
Spreed Toler <b>a</b> nce				
cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:	1	2.0	
STARTING FUEL DEL	IVE	ERY		 
Rated speed rpm	:		0	
Vact V Prestroke solenoid			450	
Stroke mm	:	7	.00	

Del. quantity
cm3/1000 strokes : 173.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.95 Test oil : ISO 4113

Combination No. : 0 402 796 806

Injection pump

Pump designation : PES6P120A720RS7240 EP type number : 0 412 726 855

Governor

Governer design. : RE30

Governer no. : 0 421 890 013

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41.5020

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. \*C : 40 Tolerance \*C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

Tolerance : + 0.50

Check

tolerance "NW :  $\leftarrow$  0.75

Start of delivery blocking

Check

tolerance \*NW : +- 0.40

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: 0 Setting point (P, R and H pump) 3.100 Uact V : 13.00 CRT mm Tolerance mm : +/- 0.05 Check : +/- 0.10tolerance mm Check value (P, R and H pump) 1,700 Uact V 6.15 CRT mm Tolerance mm : +/- 0.25 Check : +/- 0.30 tolerance mm Setting point (M pump) Uact V 3,100 CRT mm 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (amua M) 1.700 Uact V CRT mm 5.50 : +/- 0.25 Tolerance mm Check : +/- 0.30 tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in stop position. 0.75 CRT mm Tolerance mm : +/- 0.25Check tolerance mm : +/- 0.35

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V: 1.4
Tolerance V: +/- 0.6
Check
tolerance V: +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude to

Amplitude V : max.1.4

# (C) INJECTION PUMP WITH POSITIONER

# TEST POINT V1

Rated speed rpm 1050 Uact V 2.900 Del. quantity cm3/1000 strokes : 236.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0

# FUEL DELIVERY CHARACTERISTICS

Rated speed rpm 700 Uact V 2.790 Del. quantity cm3/1000 strckes : 253.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s. : +-6.0 Rated speed rpm 500 Uact V 2.690 Del. quantity cm3/1000 strokes : 258.0 Tolerance cm3/1000 strokes : +-5.0 Check tolerance cm3/1000s. 8.0 : +--

#### TEST POINT L1

Rated speed rpm : 275 Uact V : 1.580 Tolerance Volt : +- 0.030

ENGINE-SPEED SENSOR

H and M pumps)

(ALL P and R pumps not

Check tolerance			
Volt	: +-	0.060	
Del. quantity			
cm3/1000 strokes	:	<b>35.0</b>	
Tolerance			
cm3/1000 strokes	: +-	- 3.0	
Spreed			
Tolerance			
cm3/1000 strokes	:	8.0	
Check tolerance			
cm3/1000s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.01.97 Edition Test oil : ISO 4113

Combination No. : 0 403 446 300

Injection pump

Pump designation : PES6MW100/320RS1171

EP type number : 0 413 406 156

Governor

Governer design. : RQV300...1300MW80-7

Governer no. : 0 420 083 267

Cust. part No. : 5000391463

Customer-spec. information

Customer : RVI : MIDS 050212B Motor

Power KW : 117.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : <del>←</del> 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm 3.05 Tolerance mm : +- 0.05

Check

: + 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Tolerance : 0-60-120-180-240

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

CRT ZERO POSITION

Rack travel in mm : 11.00 Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 1300

Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : <del>-- 3.0</del>

Spr	eed
<b>T</b> = 1	

Tolerance cm3/1000 strokes : 3.5

Check tolerance

6.0

3.5

Rated speed rpm : 300

Rack travel in mm: -5.20
Tolerance mm: + 0.20
Del. quantity
cm3/1000 strokes: 18.0
Tolerance
cm3/1000 strokes: + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance

Tolerance cm3/1000 strokes : Check tolerance

cm3/1000s. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

# GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355 guide sleeve

travel mm : 8.74
Tolerance mm : +- 0.25

Rated speed rpm : 300

guide sleeve

travel mm : 1.38
Tolerance mm : + 0.25

Rated speed rpm : 871

guide sleeve

travel mm : 5.79
Tolerance mm : + 0.25

Rated speed rpm : 324

guide steeve travel mm : 1.78 Tolerance mm : +- 0.25

Rated speed rpm : 374

guide sleeve

travel mm : 2.49
Tolerance mm : +- 0.25

Rated speed rpm : 470

guide sleeve

travel mm : 3.30
Tolerance mm : + 0.25

Rated speed rpm : 1650

guide sleeve

travel mm : 11.50
Tolerance mm : + 0.50

# GUIDE SLEEVE POSITION

control lever

position degree : - 1 Rated speed rpm : 1430

Rack travel in mm: 9.80 Tolerance mm: + 2.00

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 700

Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed Tolerance

Titerance

cm3/1900 strokes : 3.5

Check tolerance

cm3/1000s. : 6.0

# CONTROL LEVER

control lever

position degree : 299.0 tolerance degree : + 4.0

RATED SPEED

rack travel mm : -1.00 Rated speed rpm : 1380 Tolerance 1/min : +- 5

rack travel mm : -7.00 Rated speed rpm : 1480 Tolerance 1/min : +- 15

rack travel mm : -10.50 Tolerance mm : + 0.50 Rated speed rpm : 1600

		+ Check
IDLE		- + speed 1/min : < 250
		FUEL DELIVERY CHARACTERISTICS
rol lever	24.7.2	†
tion degree		+ Aneroid pressure
rance degree	: +- 4.0	+ hPa : 700
		Rated speed rpm : 900
ting:		Del. quantity
		+ cm3/1000 strokes : 89.0
ed speed rpm	: 300	+ Tolerance
k travel mm		+ cm3/1000 strokes : + 1.5
erance min		+ Check tolerance
		+ cm3/1000s. : +- 4.0
ed speed rpm	• 200	
en sheen thu	. 200	+ Spreed
•	7.45	† Tolerance
mm min.	: < -3.40	+ cm3/1000 strokes : 5.0
		+ Check tolerance
· · · · · · · · · · · · · · · · · · ·		+ cm3/1000s. : 7.0
UE CONTROL		+
		+ Aneroid pressure
ed speed rpm	: 1300	+ hPa : -
sa speed (bil		
al amaza a	. 000	1
d speed rpm	: 900	+ Del. quantity
		+ cm3/1000 strokes : 51.0
		+ Tolerance
D/ALTITUDE		+ cm3/1000 strokes : +- 1.0
SATOR TEST		+ Check tolerance
		+ cm3/1000s. : +- 3.0
		J. 10000
3		+
speed rpm	: 500	STARTING FUEL DELIVERY
ure hPa		-
G. 5 111 G		Rated speed rpm : 100
n ac bon	•	
ure hPa	1000	reck travel mm : 20.25
speed rpm	: 500	+ Tolerance mm : + 0.75
travel mm		† Del. quantity
ance mm	: <b>←</b> 0.20	+ cm3/1000 strokes : 100.0
		+ Tolerance
REMENT		+ cm3/1000 strokes : +- 10.0
۱۹ میود میرور		+ Check tolerance
enacd	: 500	A contract of the contract of
speed rpm	. )00	+ cm3/1000s. : ← 13.0
	400	†
ire hPa	: 120	†
ravel mm	: -1.40	†
nce mm	: <b>←</b> 0.10	+
		LOW IDLE
ire hPa	: 200	
travel mm	: -0.65	Rated speed rpm : 300
・「ロソセし「師」		
	: <del></del> 0.05	† Del. quantity
nce min		+ cm3/1000 strokes : 18.0
		+ Tolerance
nce mm interlock		
interlock	· > 100	+ cm3/1000 strokes : +- 2.0
interlock		cm3/1000 strokes : + 2.0 + Check tolerance
interlock		cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5
interlock		cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed
erlock ed rpm ed rpm	: < 230	cm3/1000 strokes : + 2.0 check tolerance cm3/1000s. : + 4.5 Spreed Tolerance
lock		cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed

Check tolerance cm3/1000S.	:	5.5	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.01.97 : 15.01.97 : ISO 4113

Combination No. : 0 403 476 146

Injection pump

Pump designation : PES6MW100/320RS1245

EP type number : 0 413 406 247

Governor

Governer design. : RSV300...1100MW0A400

Governer no. : 0 420 085 293

Cust. part No. : 11032700

Customer—spec. information

Customer : VCE

Motor

: TD 63KDE

Power KW

: 90.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 046

40

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter :

6.0

x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : + 1.0

Prestroke mm 3.05

: +- 0.05 Tolerance mm

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Check

tolerance  $^{\circ}NH$  :  $\leftarrow$  0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: **←** 3.0

	<b>t</b>	<b>*.1</b>
Connect		Tolerance
Spreed	†	cm3/1000 strokes : 3.5
- 1	†	Check tolerance
Tolerance	7.5	cm3/1000s. : 6.0
cm3/1000 strakes	: 3.3	
Check tolerance		
cm3/1000s.	: 6.0	CONTROL LEVER
	+	
	†	control lever
	700	position degree : 81.0
Rated speed rpm	: 300	tolerance degree : +- 4.0
Rack travel in mm	: 5.40 I	RATED SPEED
Tolerance mm	T T T T T T T T T T T T T T T T T T T	rack travel mm : 11.30
Del. quantity	I	Rated speed rpm : 1145
cm3/1000 strokes	· 17 n	Tolerance 1/min : +- 5
Tolerance	· ''.5	TOTAL THINK TO J
cm3/1000 strokes	· + 20 I	rack travel mm : 4.00
Check tolerance	· · · · · · · · · · · · · · · · · · ·	Rated speed rpm : 4.00
cm3/1000s.	: ← 4.5 <sup>‡</sup>	
_	· <del>- 4.2</del>	Tolerance 1/min : + 15
Spreed	Ť	made denoted the second
Tolerance		rack travel mm : 1.00
cm3/1000 strokes	: 3.5	Tolerance mm : + 0.70
Check tolerance	+	Rated speed rpm : 1420
cm3/1000s.	: 5.5	
	+	rack travel mm: : 4.00
<b></b>	·	Rated speed rpm : 1275
(B) SETTING OF IN	JECTION PUMP +	
WITH GOVERNOR	†	
	+	
		LOW IDLE
GUIDE SLEEVE POSI	TION	COM TOLL
	+	
	+	control lever
control lever	+	position degree : 106.0
position degree	: - 3 +	tolerance degree : + 4.0
Rated speed rpm	: 800 +	
Dook Anarol da	. 0.45	Setting point w/out bumper spring
Rack travel in mm Tolerance mm		Rated speed rpm : 300
TOTALISM MEN	. — 0.33	
dovernos another	†	rack travel mm : 4.90 Tolerance mm : + 0.10
governor spring	†	Toterance mm : - U.10
pre-tension	. 500	Tantinus
click setting x	: 5.00	Testing:
		Rated speed rpm : 300
FULL LOAD DELIVER	Y AT FULL LOAD STOP	rack travel mm : 5.40
	1	Tolerance mm : + 0.10
Rated speed rom	: 1100	Total dilac limit
Rated speed rpm Aperoid pressure	: 1100	
Aneroid pressure	+	
Aneroid pressure hPa	: 1100 : 1500	rack travel mm : 2.00 Rated speed rpm : 580
Aneroid pressure hPa Del. quantity	: 1500	
Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 1500	rack travel mm : 2.00 Rated speed rpm : 580 Tolerance 1/min : +- 30
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 1500 : 105.0	rack travel mm : 2.00 Rated speed rpm : 580
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 105.0	rack travel mm : 2.00 Rated speed rpm : 580 Tolerance 1/min : + 30 Rated speed rpm : 100
Aneroid pressure hPa Del. quantity c%3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1500 : 105.0 : + 1.0	rack travel mm : 2.00 Rated speed rpm : 580 Tolerance 1/min : +- 30
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 105.0 : + 1.0	rack travel mm : 2.00 Rated speed rpm : 580 Tolerance 1/min : + 30 Rated speed rpm : 100
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1500 : 105.0 : + 1.0	rack travel mm : 2.00 Rated speed rpm : 580 Tolerance 1/min : + 30 Rated speed rpm : 100

TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.35 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 13.90 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 13.90 : ← 0.10
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 290 : 13.00 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 120 : 11.45 : + 0.05
Start interlock	
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	4500
hPa Rated speed rpm	: 1500 : 500

Tolerance cm3/1000 strokes	:	+-	1.5
Check tolerance cm3/1000s.	:	+-	4.0
Spreed Tolerance cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.	:		7.0
Aneroid pressure	•		_
Rated speed rpm Del. quantity	:		500
cm3/1000 strokes Tolerance	:		77.0
cm3/1000 strokes Check tolerance	:	+	1.0
cm3/1000s.	:	+	3.0
STARTING FUEL DEL	IVI	ERY	
Rated speed rpm	:		100

	START	ING	FUEL	DEL	<b>IVERY</b>
--	-------	-----	------	-----	--------------

Rated speed rpm	:	100
rack travel mm	:	20.00
Tolerance mm	: +-	- 1.0Ე
Del. quantity		
cm3/1000 strokes	:	100.0
Tolerance		
cm3/1000 strokes	: +-	- 5.0
Check tolerance		
cm3/1000s.	: +-	8.0

# LOW IDLE

Rated speed rpm Del. quantity	:	300
cm3/1000 strokes	:	17.0
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.5
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	3.5
cm3/1000s.	:	5.5

End of test specification sheet

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 130.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14.01.97 : ISO 4113

Combination No. : 0 403 476 149

Injection pump

Pump designation : PES6MW100/720RS1131 EP type number : 0 413 406 123

Governor

Governer design. : RSV350...1200MW0A406

Soverner no. : 0 420 085 295

Cust. part No. : 0270741502

Customer-spec. information Customer : MB-NFZ Motor : OM 366 A Power KW : 101.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 479 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : **←** 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

: 3.75 : +- 0.05 Prestroke mm Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 10.55 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 89.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance : +- 3.0 cm3/1000s.

Spreed

Tolerance cm3/1000 strokes	: 3.5	rack travel mm Rated speed rpm Tolerance 1/min	: 9.50 : 933 : +- 3
Check tolerance cm3/1090S.	: 6.0	rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1005
Rated speed rpm	: 350	rack travel mm Tolerance mm Rated speed rpm	: 1.00 : + 0.70
Rack travel in mm Tolerance mm Del. quantity	: + 0.25	Rated speed rpm	: 1160
cm3/1000 strokes Tolerance	: 12.0		
cm3/1000 strokes	: + 2.0	LOW IDLE	
Check tolerance cm3/1000s. Spreed	: +- 4.5	Testing:	
Tolerance cm3/1000 strokes	: 3.5	Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.80
Check tolerance cm3/1000s.	. 55	Tolerance mm	: <b>←</b> 0.25
(B) SETTING OF INJ	‡	rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 450 : +- 30
WITH GOVERNOR	‡	Rated speed rpm	: 100
GUIDE SLEEVE POSIT	TON	CRT mm min.	: > 19.00
	‡	TORQUE CONTROL	P Imperiorment (Phone) addition games at an array among history and a constitution of the constitution of
control lever position degree Rated speed rpm	: 800	Rated speed rpm rack travel mm Tolerance mm	: 10.55
Rack travel in mm Tolerance mm	: + 0.35	ANEROID/ALTITUDE	
FULL LOAD DELIVERY	AT FULL LOAD STOP	COMPENSATOR TEST	
Rated speed rpm Aneroid pressure	: 880	SETTING	
hPa Del. quantity	: 800	Rated speed rpm Pressure hPa	: 500 : 800
cm3/1000 strokes Tolerance	: 89.0	rack travel mm Tolerance mm	: 10.55 : +- 0.10
cm3/1000 strokes	: + 1.0		0.10
· · · · · · · · · · · · · · · · · · ·	: ← 3.0	Pressure hPa Rated speed rpm	: - : 500 : 9.30
Spreed Tolerance	. 75	rack travel mm Tolerance mm	: + 0.10
cm3/1000 strokes Check tolerance cm3/1000s.	: 3.5 +	MEASUREMENT	
CM3/TOUUS.		Rated speed rpm	: 500
RATED SPEED	‡	Start interlock	

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# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del, quantity

cm3/1000 strokes : 50.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  5.0

Check tolerance

cm3/1000s. : +- 8.0

#### LOW IDLE

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : + 2.9

Check tolerance

cm3/1000s. :  $\leftarrow$  4.5

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.01.97 Edition : ISO 4113 Test oil

Combination No. : 0 400 845 082

Injection pump

Pump designation : PES5A950410RS2680 EP type number : 0 410 895 972

Governor

Governer design. : RQV300...1150AB1217L

Governer no. : 0 420 212 186

Cust. part No. :

Customer-spec. information

Customer : KHD

: F5L413FFRW Motor Power KW : 85.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 : + 2.0 Tolerance °C

Overflow valve : 1 419 592 198

Inlet press. bar : 1.5

Test nozzle holde ssembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.55 : **←** 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-5-4-2

: 0-72-144-216-288 : ← 0.50 Phasing

Tolerance

Check

tolerance \*NW : **←** 0.75

# BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 8.35 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 73.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.

: **←** 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s. : 6.0	FULL LOAD DELIVERY AT FULL LOAD STO
	+
	+ Rated speed rpm : 1150
	+ Aneroid pressure
ated speed rpm : 300	+ hPa : −
	+ Del. quantity
lack travel in mm : 6.50	+ cm3/1000 strokes : 73.0
folerance mm : + 0.10	+ Tolerance
el.quantity m3/1000 strokes : 15.0	- cm3/1000 strokes : +- 1.0
	+ Check tolerance + cm3/1000s. : +- 3.0
olerance m3/1000 strokes : +- 2.0	+ cm3/1000s. : +- 3.0 + Spreed
heck tolerance	Tolerance
neck tolerance %3/1000s. : +- 4.5	- cm3/1000 strokes : 3.5
Spreed	Check tolerance
rolerance	+ cm3/1000s. : 6.0
cm3/1000 strokes : 3.5	T (110) 10003. ; 0.0
Check tolerance	$\mathbf{I}$
cm3/1000s. : 5.5	
, 3.5	CONTROL LEVER
(D) CETTING OF THISCOTION DIMO	- control lever
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	+ position degree : 120.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
	rack travel mm : 7.30
Dimension a mm : 1.40	+ Rated speed rpm : 1195
Rated speed rpm : 1150	+ Tolerance 1/min : +- 5
guide steeve	+
travel mm : 8.00	† rack travel mm : 4.00
Tolerance mm : +- 0.20	Rated speed rpm : 1245
	+ Tolerance 1/min : + 15
Rated speed rpm : 300	+
guide sleeve	† rack travel mm : 0.50
travel mm : 1.40	† Tolerance mm : ← 0.50
Tolerance mm : + 0.10	Rated speed rpm : 1350
Rated speed rpm : 500	I
guide sleeve	1
travel mm : 3.50	
Tolerance mm : +- 0.10	LOW IDLE
	+
Rated speed rpm : 800	+
guide sleeve	+ control lever
travel mm : 5.40	position degree : 69.0
Tolerance mm : + 0.20	+ tolerance degree : + 4.0
	+
NITHE CLEENE DOCTTON	Testing:
GUIDE SLEEVE POSITION	+ Rated speed rpm : 300
	rack travel mm : 6.50
control lever	Tolerance mm : + 0.10
control lever position degree : - 1	I localina : = 0.10
Rated speed rpm : 1200	Rated speed rpm : 100
rated sheed thus : 1500	T have speed this: 100
Rack travel in mm : 16.50	CRT mm min. :> 8.00
olerance mm : +- 1.30	

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TORQUE CONTROL	
Rated speed rpm	: 1150
rack travel mm	: 8.35
Tolerance mm	: + 0.05
Rated speed rpm	
rack travel mm Tolerance mm	: 9.75 : +- 0.05
IOCET CE ION	
Rated speed rpm	: 840
rack travel mm Tolerance mm	: 9.40 : +- 0.10
Rated speed rpm rack travel mm	: 1010 : 8.70
Tolerance mm	: +- 0.10
TOTAL GITTE HALL	
Start interlock	
Rated speed rpm	; > 100
Rated speed rpm	: > 100 : < 220
Check	
speed 1/min	: > 80
Check	. 0.0
speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa	. 700
Rated speed rpm Del. quantity	: 700
cm3/1000 strokes	: 82.0
Tolerance	
cm3/1000 strokes	: <del>+</del> 1.5
Check tolerance cm3/1000s.	: +- 4.0
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Aneroid pressure	• –
Aneroid pressure hPa	: -
Aneroid pressure hPa Rated speed rpm	: - : 100
Aneroid pressure hPa	: 100
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 100 : 67.5
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 100 : 67.5
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 100 : 67.5

rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 14.50 : + 0.20 : 125.0 : + 5.0 : + 8.0
LOW IDLE	·
Rated speed rpm	: 300
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 15.0
	: +- 2.0
Check tolerance cm3/1000s.	<b>: +-</b> 4.5
Spreed Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5

End of test specification sheet

Rated speed rpm : 100

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 21.01.97 : ISO 4113

Combination No. : F 002 A07 048

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...950A0C927R

Governer no. : F 002 A20 235

Cust. part No. : 3283916

Customer-spec. information

Customer : CUMMINS

: 6BTA-160/1900 Motor

: 119.0 Fower KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : + 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 500

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Tolerance mm Check

Prestroke mm

: + 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : - 1.50

Firing order : 1-5-3-6-2-

2.85

: +- 0.05

: 0-60-120-180-240 Phasing

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : + 0.10

Check

tolerance \*NW : **←** 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.30

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 119.4

Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 3.0
Spreed	
Tolerance cm3/1000 strokes	; 4.0
Check tolerance cm3/1000s.	: 6.5
Rated speed rpm	: 475
Rack travel in mm Tolerance mm	: 5.90 : + 0.10
Del. quantity cm3/1000 strokes	: 23.5
Tolerance cm3/1000 strokes	: <b>←</b> 2.0
Check tolerance cm3/1000s. Spreed	: <del>+</del> 4.5
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 8.0
(B) SETTING OF IN. WITH GOVERNOR GUIDE SLEEVE POSIT	
control lever	
position degree Rated speed rpm	: FREE : 800
Rack travel in mm Tolerance mm	: 0.50 : + 0.20
governor spring pre-tension	
click setting x	: 2.00
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 950
hPa Del. quantity	: 850
cm3/1000 strokes	: 119.4

Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 1.0 : ← 3.0
Spreed Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 91.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.30 : 1000 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1075 : + 5
rack travel mm Tolerance mm Rated speed apm	: 0.85 : ← 0.55 : 1200
rack travel mm Rated speed rpm	: 4.00 : 1075
LOW TOLE	

# LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Control lever difference Grad : 15.0 tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 475 rack travel mm : 5.10 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 475 rack travel mm : 5.90 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 540
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 13.30 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 850

Pressure hPa : Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 550 rack travel mm : 12.50 Tolerance mm : + 0.20

Pressure hPa : 350
rack travel mm : 11.45
Tolerance mm : → 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 75.6

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 122.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

cm3/1000s. : + 15.0

LOW IDLE

Rated speed rpm : 475

Del. quantity

cm3/1000 strokes : 23.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.11.96 : ISO 4113 Test oil

**Combination No. : 0 402 076 756** 

Injection pump

Pump designation : PES6P100A320LS3317

EP type number : 0 412 006 706

@overnor

Governer design. : RSV400...1200P5A587

Governer no. : 0 421 833 446

Cust. part No. : 1820269091

Customer-spec. information Customer : NAVISTAR : DTA-466 Motor Fower KW : 204.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 60D

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

: 3.00 : + 0.05 Prestroke mm Tolerance mm Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : **←** 0.30

Check

tolerance 'NW : +- 0.75

### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 14.65

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 176.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: <del>--</del> 3.0 cm3/1000s.

Spreed

Tolerance cm3/1000 strokes :	8.0	Rated speed rpm Tolerance 1/min	
Check tolerance cm3/1000s. :	12.0	rack travel mm Rated speed rpm Tolerance 1/min	: 1315
Rack travel in mm : Tolerance mm :		rack travel mm Tolerance mm Rated speed rpm rack travel mm	: +- 0.55 : 1400
(9) SETTING OF INJE	CTION PUMP -	Rated speed rpm	: 1320
GUIDE SLEEVE POSITION	Oki	LOW IDLE	<u></u>
control lever position degree : Rated speed rpm :	- 3 800	control lever position degree tolerance degree Testing:	: 25.0 : + 4.0
Rack travel in mm: Tolerance mm: governor spring		Rated speed rpm rack travel mm Tolerance mm	
pre-tension click setting x :	3.50	Rated speed rpm	: 100
FULL LOAD DELIVERY	AT FULL LOAD STOP	CRT mm min.	: > 19.00
Rated speed rpm :	1200	TORQUE CONTROL	
Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	-	Rated speed rpm rack travel mm Tolerance mm	: 1200 : 14.65 : + 0.05
cm3/1000 strokes : Check tolerance cm3/1000s. : Spreed Tolerance	+ 3.0 + 3.0	ANEROID/ALTITUDE COMPENSATOR TEST	
cm3/1000 strokes : Check tolerance	8.0	SETTING	
cm3/1000\$. :	12.0	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : 1500 : 14.65 : + 0.05
CONTROL LEVER		Pressure hPa	: -
control lever position degree : tolerance degree :	55.0 +- 4.0	Rated speed rpm rack travel mm Tolerance mm	
RATED SPEED rack travel mm :	13.60	MEASUREMENT	

Rated speed rpm : 1200

Pressure hPa : 650 rack travel mm : 13.20 Tolerance mm : + 0.20

Pressure hPa : 240
rack travel mm : 9.55
Tolerance mm : + 0.05

Start interlock

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 145.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : + 25.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 13,11,96 : ISO 4113

Combination No. : 0 402 076 757

Injection pump

Pump designation : PES6P100A320LS3319 EP type number : 0 412 006 707

Governor

Governer design. : RSV350...1300P5A565

Governer no. : 0 421 833 414

Cust. part No. : 1820268091

Customer-spec. information Customer : NAVISTAR : DT-408 Motor

Power KW : 141.5

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8

Overflow quantity

min. L/h : 260 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : ← 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 12.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 138.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

	+
Spreed Tolerance	+ RATED SPEED + rack travel mm : 11.50 + Rated speed rpm : 1345
cm3/1000 strokes : 8.0	Tolerance 1/min : + 5
Check tolerance cm3/1000s. : 12.0	rack travel mm : 4.00 Rated speed rpm : 1405 Tolerance 1/min : + 5
Rack travel in mm : 5.60 Tolerance mm : +- 0.10	rack travel mm : 0.85 Tolerance mm : ← 0.55 Rated speed rpm : 1500
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1410
GUIDE SLEEVE POSITION	- LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 71.0 tolerance degree : +- 6.0
Rack travel in mm : 0.50	Testing:
Tolerance mm : +- 0.20	Rated speed rpm : 350 rack travel mm : 5.60
governor spring pre-tension	+ Tolerance mm : +- 0.10
click setting x : 3.75	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	—
Rated speed rpm : 1300	TORQUE CONTROL
Aneroid pressure hPa : 1200 Del. quantity	Rated speed rpm : 1300 rack travel mm : 12.55
cm3/1000 strokes : 138.5 Tolerance	+ Tolerance mm : + 0.05
cm3/1000 strokes : +- 1.0 Check tolerance	ANEROID/ALTITUDE
cm3/1000s. : +- 3.0 Spreed Tolerance	+ COMPENSATOR TEST
cm3/1000 strokes : 8.0 Check tolerance	SETTING
cm3/1000s. : 12.0	Rated speed rpm : 1300 Pressure hPa : 1200 rack travel mm : 12.55 Tolerance mm : +- 0.05
CONTROL LEVER	+ Pressure hPa : -
control lever position degree : 111.0 tolerance degree : +- 6.0	Rated speed rpm : 500 rack travel mm : 8.30 Tolerance mm : + 0.20

### **MEASUREMENT**

Rated speed rpm : 1300

Pressure hPa : 650 rack travel mm : 11.50 Tolerance mm : + 0.20

Pressure hPa : 290
rack travel mm : 9.25
Toleranse mm : + 0.05

Start interlock

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 74.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

### STARTING FUEL DELIVERY

Reted speed rom : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 135.0

Toleranse

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : +- 25.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13, 11, 96 : ISO 4113 Test oil

Combination No. : 0 402 076 760

Injection pump

Pump designation : PES6P100A320LS3317

EP type number : 0 412 006 706

Governor

Governer design. : RSV415...1100P8A577

Governer no. : 0 421 833 433

Cust. part No. : 1818694091

Customer-spec. information Customer : NAVISTAR Motor : DT-531 Power KW : 145.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

: 1 417 413 076 Overflow valve

Inlet press. bar : 2.8 : + 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 : **←** 1.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

Rack travel in mm: 10.50 Tolerance mm : + 1.50

x inside diameter :

x length mm :

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

Test pressure bar: 17.0 Tolerance bar : +- 1.0

per values \_\_\_\_\_

Prestroke mm

Tolerance mm

tolerance mm

Check

BEGINNING OF DELIVERY

REMARKS

Firing order : 1-5-3-6-2-

3.0

3.00 : +- 0.05

: + 0.10

600

: 0-60-120-180-240 Phasing Tolerance : +- 0.30

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 138.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +-3.0

Spreed

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Tolerance	+ tolerance degree : + 6.0
cm3/1000 strokes : 8.0	+
Check tolerance	+ RATED SPEED + rack travel mm : 11.40
cm3/1000s. : 12.0	Rated speed rpm : 1150
	+ Tolerance 1/min : + 5
	1
	+ rack travel mm : 4.00 + Rated speed rpm : 1200
Rack travel in mm: 5.30	Tolerance 1/min : + 5
Tolerance mm : + 0.10	+
	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1300
WITH GOVERNOR	+
	+ rack travel mm : 4.00
	Rated speed rpm : 1205
GUIDE SLEEVE POSITION	+
	İ
control lever	LOW IDLE
position degree : - 3	<del>-</del> -
Rated speed rpm : 800	t control lever
Rack travel in mm : 0.50	position degree : 71.0
Tolerance mm : + 0.20	tolerance degree : + 6.0
	+ control lever
governor spring pre-tension	+ position degree : 21.0
click setting x : 4.50	tolerance degree : +- 4.0
	+ Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	T lesting.
	Rated speed rpm : 415_
Rated speed rpm : 1100	+ rack travel mm : 5.30 + Tolerance mm : +- 0.10
Aneroid pressure hPa : 1200	+ Toterance min : += 0.10
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 138.0	+ CRT mm min. : > 19.00
Tolerance cm3/1000 strokes : +- 1.0	+ CRI mm min. :> 19.00
Check tolerance	
cm3/1000s. : +- 3.0	+ TORQUE CONTROL
Spreed Tolerance	+ Rated speed rpm : 1100
cm3/1000 strokes : 8.0	+ rack travel mm : 12.75
Check tolerance	+ Tolerance mm : + 0.05
cm3/1000s. : 12.0	I
	ANEROID/ALTITUDE
CONTROL LEVED	+ COMPENSATOR TEST
CONTROL LEVER	Ī
control lever	SETTING
position degree : 52.0	Poted speed ppp + 500
tolerance degree : +- 4.0	+ Rated speed rpm : 500 + Pressure hPa : 1200
control lever	rack travel mm : 12.75
position degree : 102.0	+ Tolerance mm : + 0.05

Pressure hPa : Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : +- 0.20

## **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 480 rack travel mm : 11.40 Tolerance mm : + 0.20

Pressure hPa : 240 rack travel mm : 9.45 Tolerance mm : + 0.05

# Start interlock

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm5/1000 strokes : 76.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 145.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  25.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.11.96 Test oil : ISO 4113

Combination No. : 0 402 076 761

Injection pump

Pump designation : PES6P100A320LS3317

EP type number : 0 412 006 706

Governor

Governer design. : RSV415...1100P8A576

Governer no. : 0 421 833 432

Cust. part No. : 1817593091

Customer—spec. information

Customer : NAVISTAR Motor : DT-531 Power KW : 161.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

ĸ

x inside diameter: 3.0 x length mm : 600

#### **FEMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.00
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Fhasing : 0-60-120-180-240

Tolerance :  $\leftarrow$  0.30

Check

tolerance  $^{\circ}NW$  : +- 0.75

# BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 3.0

Spreed

N06

Tolerance cm3/1000 strokes : 8.0	tolerance degree : +- 6.0
Check tolerance cm3/1000s : 12.0	RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1150 Tolerance 1/min : +- 5
Rack travel in mm : 5.30 Tolerance mm : +- 0.10	rack travel mm : 4.00 Rated speed rpm : 1195 Tolerance 1/min : + 5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
	rack travel mm : 4.00 Rated speed rpm : 1200
GUIDE SLEEVE POSITION	<del>-</del>
control lever position degree : - 3 Rated speed rpm : 800	+ LOW IDLE
Rack travel in mm: 0.50 Tolerance mm: + 0.20	control lever position degree : 72.0 tolerance degree : +- 6.0
governor spring pre-tension click setting x : 5.00	control lever position degree : 22.0 tolerance degree : + 4.0
FULL LOAD DELIVERY AT FULL LOAD STOP	$\overline{\downarrow}$ Testing:
Rated speed rpm : 1100 Aneroid pressure hPa : 1200	Rated speed rpm : 415 rack travel mm : 5.30 Tolerance mm : + 0.10
Del. quantity cm3/1000 strokes : 151.0	Rated speed rpm : 100
Tolerance cm3/1000 strokes : + 1.0	CRT mm min. : > 19.00
Check tolerance cm3/1000s. : +- 3.0 Spreed	TORQUE CONTROL
Tolerance cm3/1000 strokes : 8.0 Check tolerance	- Rated speed rpm : 1100 - rack travel mm : 13.35 - Tolerance mm : + 0.05
cm3/1000s. : 12.0	
CONTROL LEVER	ANEROID/ALTITUDE COMPENSATOR TEST
control lever	SETTING
position degree : 51.0 tolerance degree : +- 4.0	Rated speed rpm : 1100 Pressure hPa : 1200 rack travel mm : 13.35
control lever position degree : 101.0	rack travel mm : 13.35 Tolerance mm : + 0.05

toter arise degree	0.0
RATED SPEED rack travel mm Rated speed rom Tolerance 1/min rack travel mm	
rack travel mm Rated speed rpm Tolerance 1/min	: 1195 : <del></del> 5
rack travel mm Tolerance mm Rated speed rpm	
rack travel mm Rated speed rpm	: 4.00 : 1200
LOW IDLE	
control lever position degree tolerance degree	: 72.0 : +- 6.0
control lever position degree tolerance degree	: 22.0 : ← 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 415 : 5.30 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 13.35 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 1200 : 13.35 : ← 0.05

Pressure hPa : Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : +- 0.20

#### **MEASUREMENT**

Rated speed rpm : 1100

Pressure hPa : 540 rack travel mm : 11.90 Tolerance mm : +- 0.20

Pressure hPa : 250 rack travel mm : 9.45 Tolerance mm : + 0.05

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity

cm3/1000 strokes : 76.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 145.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  25.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.11.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 076 763

Injection pump

Pump designation : PES6P100A320LS3317

EP type number : 0 412 006 706

Governor

Governer design. : RSV415...1100P8A579

Governer no. : 0 421 833 435

Cust. part No. : 1822012091

Customer-spec. information Customer : NAVISTAR

: DT-466 Motor Power KW : 134.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : **←** 1.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

**BEGINNING OF DELIVERY** 

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm 3.00 : + - 0.05Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.35 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 125.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: +- 3.0 cm3/1000s.

Spreed

Tala sama	Anlanana damas a la CO
Tolerance + cm3/1000 strokes : 8.0 +	tolerance degree : +- 6.0
	RATED SPEED
Check tolerance	rack travel mm : 11.20
cm3/1000s. : 12.0	Rated speed rpm : 1160
	Tolerance 1/min : +- 5
1	rack travel mm : 4.00
I	Rated speed rpm : 1195
Rack travel in mm: 5.40	Tolerance 1/min : +- 5
Tolerance mm : + 0.10	
+	rack travel mm : 0.85
	Tolerance mm : + 0.55
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1300
WITH GOVERNOR	rack travel mm : 4.00
· 1	Rated speed rpm : 1200
	The state of the s
GUIDE SLEEVE POSITION	
†	
control lever	LOW IDLE
position degree : -3	w-17 deptate
Rated speed rpm : 800	
†	control lever
Rack travel in mm: 0.50	position degree : 74.0
Tolerance mm : ← 0.20	tolerance degree : +- 6.0
governor spring	control lever
pre-tension +	position degree : 24.0
click setting x : 5.00	tolerance degree : + 4.0
+	-
FIRE LOAD DELTUEDY AT FIRE LOAD OTOD	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 415
Rated speed rpm : 1100	rack travel mm : 5.40
Aneroid pressure	rack travel mm : 5.40 Tolerance mm : - 0.10
hPa : 1200 +	
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 125.5	ADT - 1
Tolerance + 1.0	CRT mm min. : > 19.00
cm3/1000 strokes : +- 1.0 +- Check tolerance +-	
cm3/1000s. : + 3.0	TORQUE CONTROL
Spreed	TOTAL WEST STATES
Tolerance +	Rated speed rpm : 1100
cm3/1000 strokes : 8.0	rack travel mm : 12.35
Check tolerance	Tolerance mm : +- 0.05
cm3/1000s. : 12.0	
1	ANEROID/ALTITUDE
	COMPENSATOR TEST
CONTROL LEVER	TOTAL STORY OF THE PARTY OF THE
+	
control lever	SETTING
position degree : 55.0	Poted speed run : 1400
tolerance degree : + 4.0	Rated speed rpm : 1100 Pressure hPa : 1200
control lever	
position degree : 105.0	rack travel mm : 12.35 Tolerance mm : +- 0.05
T T T T T T T T T T T T T T T T T T T	tot 01100 timil 1

N10

Pressure hPa : Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : + 0.20

# **MEASUREMENT**

Rated speed rpm : 1100

Pressure hPa : 440 rack travel mm : 11.40 Tolerance mm : + 0.20

Pressure hPa : 240
rack travel mm : 9.75
Tolerance mm : + 0.05

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500
Del guantify

Del. quantity cm3/1000 strokes : 81.5

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1600s. : + 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  25.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.11.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 076 770

Injection pump

Pump designation : PES6P11CA320LS3318 EP type number : 0 412 016 749

Governor

Governer design. : RSV350...750P4A561

Governor no. : 0 421 833 451

Cust. part No. : 1823837092

Customer-spec. information Customer : NAVISTAR Motor : DT-531 : 224.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : **←** 2.0

Cverflow valve : 1 417 413 076

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Cutside diameter: 6.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm 3.00 : + 0.05 Tolerance mm Check

tolerance mm

: **←** 0.10

Rack travel in mm: 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

Tolerance : **←** 0.30

Check

tolerance \*NW : + 0.50

# BASIC SETTING

Rated speed rpm : 650

Rack travel in mm: 12.55 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 225.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

: +cm3/1000s. 3.0

Spreed

Tolerance cm3/1000 strokes : 4.0	+ Check tolerance - cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	<u> </u>
	CONTROL LEVER
Rated speed rpm : 340	<pre>+ control lever + position degree : 47.0 + tolerance degree : + 4.0</pre>
Rack travel in mm: 5.20	+
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity	+ rack travel mm : 10.20
cm3/1000 strokes : 35.0	+ Rated speed rpm : 750 _
Tolerance	† Tolerance 1/min : + 5
cm3/1000 strokes : +- 2.0	. 1
Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 4.5	+ Rated speed rpm : 800
Spreed Tolerance	† Tolerance 1/min : +- 5
cm3/1000 strokes : 8.0	† rack travel mm : 0.85
Check tolerance	Tolerance mm : + C.55
cm3/1000s. : 12.0	Rated speed rpm : 900
112.0	Thateu speed Thin . 700
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 805
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : - 3	position degree : 26.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	† Testing:
roterance min o.to	Rated speed rpm : 340
governor spring	rack travel mm : 5.20
pre-tension	+ Tolerance mm : + 0.10
click setting x : 4.00	4.
	+ Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. :> 19.00
Rated speed rpm : 650	+
Aneroid pressure hPa : -	TORQUE CONTROL
Del. quantity	Rated speed rpm : 650
cm3/1000 strokes : 225.5	rack travel mm : 12.55
Tolerance	Tolerance mm : +- 0.05
cm3/1000 strokes : +- 1.0	
Check tolerance	1
cm3/1000s. : +- 3.0	+ Start interlock
Spreed	+
Tolerance	1
cm3/1000 strokes : 4.0	<del>}</del>
	+

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 145.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : + 25.0

# LOW IDLE

Rated speed rpm : 340

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.11.96 Edition Test oil : ISO 4113

Combination No. : 0 402 076 774

Injection pump

Pump designation : PES6P100A320LS3342 EP type number : 0 412 006 710

Governor

Governer design. : RSV415...1100P8A596

Governer no. : 0 421 833 462

Cust. part No. : 1824624091

Customer-spec. information Customer : NAVISTAR Motor : DT-530 Power KW : 187.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C ÷ ÷ 2.0 Tolerance °C

Overflow valve : 1 417 413 076

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 : **←** 1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0

N15

x inside diameter : 3.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 : +- 0.05 Tolerance mm Check

: **←** 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

Tolerance : **←** 0.30

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55 Tolerance mm:  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes: 109.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

: +- 3.0 cm3/1000s.

Spreed

Tolerance	Rated speed rpm : 1150
cm3/1000 strokes : 8.0	Tolerance 1/min : + 5 Check
Check tolerance : 12.0	speed 1/min : + 10
	rack travel mm : 4.00 Rated speed rpm : 1200
	Tolerance 1/min : +- 5
Rack travel in mm: 5.20	+ Check - speed 1/min : ← 10
Tolerance mm : ← 0.10	<del>-</del>
	rack travel mm : 0.85 Tolerance mm : + 0.55
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1300
WITH GOVERNOR	† + rack travel mm : 4.00
	Rated speed rpm : 1205
GUIDE SLEEVE POSITION	
control lever	LOW IDLE
position degree : - 3	t com ince
Rated speed rpm : 800	+ - control lever
Rack travel in mm: 0.50	position degree : 75.0
Tolerance mm : + 0.20	tolerance degree : + 6.0
governor spring	Testing:
pre-tension click setting x : 4.00	Rated speed rpm : 415
The section of the se	rack travel mm : 5.20
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100
Rated speed rpm : 1100	+
Aneroid pressure hPa : 1200	CRT mm min. : > 19.00
Del. quantity	+
cm3/1000 strokes : 109.0	TORQUE CONTROL
cm3/1000 strokes : + 1.0	Rated speed rpm : 1100
Check tolerance cm3/1000s. : + 3.0	rack travel mm : 11.55 Tolerance mm : + 0.05
Spreed	1
Tolerance	Rated speed rpm : 800
cm3/1000 strokes : 8.0 - Check tolerance	Rated speed rpm : 800 rack travel mm : 12.50 Tolerance mm : + 0.10
cm3/1000s. : 12.0	<u> </u>
-	ANEROID/ALTITUDE
CONTROL LEVER	COMPENSATOR TEST
	1
control lever position degree : 105.0	+ SETTING
tolerance degree : + 6.0	Rated speed rpm : 800
	+ Pressure hPa : 1200
RATED SPEED : 10.50	Rated speed rpm : 800 Pressure hPa : 1200 rack travel mm : 12.50 Tolerance mm : +- 0.20

N16

#### **MEASUREMENT**

Rated speed rpm : 800

Pressure hPa : 445
rack travel mm : 11.40
Tolerance mm : + 0.20

Pressure hPa : 230 rack travel mm : 9.50 Tolerance mm : + 0.05

Start interlock

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPe : 1200 Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 138.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 77.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rom : 100 rack travel mm : 21.00 Tolerance mm : +- 0.50

Del. quantity

cm3/1000 strokes : 153.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 25.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 13.11.96

Combination No. : 0 402 076 775

Injection pump

Pump designation : PES6P100A320LS3342

EP type number : 0 412 006 710

Governor

Governer design. : RSV415...1100P8A597

Governer no. : 0 421 833 463

Cust. part No. : 1824626091

Customer-spec. information Customer : NAVISTAR : DT-530 Motor

Power KW

: 153.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 076

Inlet press. bar : Inlet press. bar : 2.8 Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm 3.00 : +- 0.05 Tolerance mm

Check

: ← 0.10 tolerance am

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 104.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes	: 8.0	Rated speed rpm Tolerance 1/min Check	: 1150 : + 5
Check tolerance cm3/1000s.	: 12.0	speed 1/min	: +- 10
Rack travel in mm		rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 4.00 : 1200 : + 5 : + 10
	: + 0.10	rack travel mm	: 0.85
(B) SETTING OF IN	JECTION PUMP	Tolerance mm Rated speed rpm	: + 0.55 : 1300
		+ rack travel mm + Rated speed rpm	: 4.00 : 1205
GUIDE SLEEVE POSI	TION	Ŧ	
control lever position degree		LOW IDLE	
Rated speed rpm	: 800	† control lever	
Rack travel in mm Tolerance mm	: 0.50 : + 0.20	position degree tolerance degree	
governor spring pre-tension		Testing:	
click setting x		+ Rated speed rpm + rack travel mm + Tolerance mm	: 415 : 5.60 : \( \dots \) 0.10
	Y AT FULL LOAD STOP	Rated speed rpm	: 100
Rated speed rpm Aneroid pressure hPa	: 1100 : 1200	CRT mm min.	: > 19.00
Del. quantity cm3/1000 strokes	: 104.5	TORQUE CONTROL	
Tolerance cm3/1000 strokes Check tolerance	: + 1.0	Rated speed rpm rack travel mm	
cm3/1000s. Spreed	: <del>←</del> 3.0	Tolerance mm	
Tolerance cm3/1000 strokes	: 8.0	+ Rated speed rpm + rack travel mm	: 800 : 12.50 : + 0.10
Check tolerance cm3/1000s.	: 12.0	Tolerance mm	: +- 0.10
<u> </u>		ANEROID/ALTITUDE COMPENSATOR TEST	
CONTROL LEVER		‡	
control lever position degree	: 104.0	SETTING	
tolerance degree	: +- 6.0	Rated speed rpm Pressure hPa	: 1200
RATED SPEED rack travel mm	: 10.50	† rack travel mm † Tolerance mm	: 12.55 : + 0.10

#### **MEASUREMENT**

003 Rated speed rpm

435 Pressure hPa : 11.60 rack travel mm Tolerance mm : +- 0.20

Pressure hPa 250 : 10.05 : + 0.05 rack travel mm Tolerance mm

Start interlock

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 800 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 131.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000S.: +- 4.0

Aneroid pressure

hPa 500 Rated speed rpm :

Del. quantity cm3/1000 strokes : 78.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s.: +-4.0

### STARTING FUEL DELIVERY

100 Rated speed rpm 20.50 rack travel mm : : +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : **←** 25.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 22,10,96 : ISO 4113

Combination No. : 0 402 736 866

Injection pump

Pump designation : PES6P12OA12ORS7349 EP type number : 0 412 726 920

Governor

Governer design. : RQV400...1250PA1171K

Governer no. : 0 421 815 437

Cust. part No. : 3928149

Customer-spec. information

Customer : CDC

Motor

: 6BTA-A

Power KW : 156.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: **←** 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x Length mm : 600

x inside diameter: 3.0

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-50-120-180-240 Tolerance : + 0.30

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 6.00 Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.95

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 177.0  Tolerance cm3/1000 strokes : + 1.0  Check tolerance	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0
cm3/1000s. : +- 4.0 Spreed	Check tolerance : 12.0
Tolerance cm3/1000 strokes : 8.0	CONTROL LEVER
Check tolerance cm3/1000s. : 12.0	control lever position degree : 120.0 tolerance degree : + 6.0
Rated speed rpm : 420	RATED SPEED - rack travel mm : 12.90 - Rated speed rpm : 1320
Rack travel in mm: 5.60 Tolerance mm: + 0.20 Del. quantity cm3/1060 strokes: 18.0	+ Tolerance 1/min : + 15 + Check + speed 1/min : + 20
cm3/1000 strokes : "8.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : +- 5
cm3/1000s. : + 5.0 Spreed Tolerance	Check speed 1/min : + 10
cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1550
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOU TOUS
	+ LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 72.0 tolerance degree : + 6.0
control lever position degree : - 1 Rated speed rpm : 1410	Control lever difference Grad: 48.0 tolerance degree: +- 6.0
Rack travel in mm : 13.00 Tolerance mm : +- 2.00	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 420 rack travel mm : 5.60 Tolerance mm : + 0.20
Rated speed rpm : 1250 Aneroid pressure hPa : 1200	Rated speed rpm : 300
hPa : 1200 Del. quantity cm3/1000 strokes : 177.0	CR7 mm min. :> 8.90
	+ Rated speed rpm : 420

#### TORQUE CONTROL 1250 Rated speed rpm : : 13.95 rack travel mm Tolerance mm : **←** 0.05 : 800 : 12.00 : + 0.10 Rated speed rpm rack travel mm Tolerance mm 500 Rated speed rpm nack traval mm : 10.90 Tolerance mm : +- 0.20 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 1250 Rated speed rpm Pressure hPa 1200 Pressure hPa 1250 Rated speed rpm 9.70 rack travel mm : +- 0.20 Tolerance ma **MEASUREMENT** : 1250 Rated speed rpm Pressure hPa 585 12.90 rack travel mm : +- 0.30 Tolerance mm 305 Pressure hPa rack travel mm : 10.95 : + 0.20 Tolerance mm Start interlock Rated speed rpm : > 100 315 Rated speed rpm : < Check speed 1/min 80 : > Check 325 speed 1/min : <

F1 151	ACI T	WENV.	CHADAC	TENT	CTICC
FUEL	DELL	VERT	CHARAC	LEKT	21Tr2

Aneroid pressure

hPa : 1200 Rated speed rpm : 800

Del. quantity			
cm3/1000 strokes	:		132.0
Tolerance			
cm3/1000 strokes	:	+-	3.0
Check tolerance			
cm3/1000s.	:	+-	6.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance	·		
cm3/1000s.	•		12.0
	•		
Aneroid pressure			
hPa	:		-
Rated speed rpm	:	•	1250
Del. quantity			
cm3/1000 strokes	•		95.0
Tolerance	•		,,,,
cm3/1000 strokes		+-	2.0
Check tolerance	•	•	2.0
cm3/1000s.		_	4.0
(111) 10003.	•	т-	4.0

STARTING FUEL DELIVE	RY
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Rated speed rpm rack travel mm	:	100 12.50
Tolerance mm	: +-	- 0.50
Del. quantity cm3/1000 strokes	:	155.0
Tolerance cm3/1000 strokes	: +-	- 20.0
Check tolerance cm3/1000S.	: +	- 25.0

### LOW IDLE

Rated speed rpm Del. quantity	:		420
cm3/1000 strokes	:		18.0
Tolerance cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s.	•	+	5.0
Spreed	•	·	<b>J.U</b>
Tolerance cm3/1000 strokes	:		4.0
Check tolerance cm3/1000s.	:		8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 22.01.97 : ISO 4113

Combination No. : 0 402 746 646

Injection pump

Pump designation : PES6P120A320RS7363 EP type number : 0 412 726 931

Governor

Governer design. : RQV325...1000FA1203K

Governer no. : 0 421 815 458

Cust. part No. : 313GC5216-P4

Customer-spec. information : MACK

Customer Motor

: EM5-290

Power KW

: 217.5

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: **←** 2.0

Overflow valve : 2 417 413 084

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar

: **←** 1.5

Test lines

: 1 680 750 008

Outside diameter : 6.0

x length mm :

x inside diameter: 2.0

500

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

: 4.20 Prestroke mm Tolerance mm : **←** 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 12.00 Tolerance mm :  $\leftarrow$  1.00

: 1-5-3-6-2firing order

: 4

Phasing : 0-60-120-180-240

Tolerance : +- 0.30

Check

: + 0.75tolerance 'NW

Start of delivery blocking

: +- 0.50 Tolerance

Check

tolerance \*NW : **←** 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.05 : <del>+-</del> 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 291.0

Tolerance		
		∔ guide sleeve
		guide officere
cm3/1000 strokes	: +- 1.0	travel mm : 2.85
		+ Tolerance mm : + 0.25
Check tolerance		<del></del>
cm3/1000s.	; <del>+</del> 4.0	Rated speed rpm : 610
CIRCY TUUUS.	. +- 4.0	
		+ guide sleeve
Spreed		+ travel mm : 4.40
		+ Tolerance mm : + 0.25
Tulanama		T Total affect man . 1 U.25
Tolerance		<b>†</b>
cm3/1000 strokes	: 5.0	+ Rated speed rpm : 1440
		+ guide sleeve
Chaal, balananaa		
Check tolerance		+ travel mm : 13.50
cm3/1000s.	: 9.0	+   Tolerance mm   : +-   0.50
	***************************************	
		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 325	1
marca opeca i piii	• • • • • • • • • • • • • • • • • • • •	→ Rated speed rpm : 1000
Rack travel in mm	4.60	+ Aneroid pressure
Tolerance mm	: +- 0.10	+ hPa : 1200
Del. quantity		· · · · · · · · · · · · · · · · · · ·
		+ Del. quantity
cm3/1000 strokes	: 47.0	+ cm3/1000 strokes : 291.0
Tolerance		† Tolerance
cm3/1000 strokes		+ cm3/1000 strokes : $+$ 1.0
	; 3.0	
Check tolerance		🕂 Check tolerance
cm3/1000s.	: +- 5.0	+ cm3/1000s. : +- 4.0
Spreed	3.0	Spreed
Tolerance		† Tolerance
cm3/1000 strokes	: 8.0	+ cm3/1000 strokes : 5.0
Check tolerance		- Check tolerance
	44.	
cm3/1000s.	: 12.0	+ cm3/1000s. : 9.0
		+
		+
(B) SETTING OF IN	HECTION PHMP	
WITH GOVERNOR	000110111011	CONTROL LEVER     CONTROL LEVER
MILL GONEKIAOK		T CONTROL LEVER
		†
		+ control lever
GUIDE SLEEVE TRAV	'Fl	position degree : 117.0
00-00 000-00 11011		
Bakad as	. 4057	tolerance degree : + 6.0
Rated speed rpm		
	: 1056	T
	: 1006	T RATED SPEED
guide sleeve		
guide sleeve travel mm	: 9.06	rack travel mm : 13.00
guide sleeve		rack travel mm : 13.00 Rated speed rpm : 1050
guide sleeve travel mm	: 9.06 : + 0.25	rack travel mm : 13.00
guide sleeve travel mm Tolerance mm	: 9.06 : + 0.25	rack travel mm : 13.00 Rated speed rpm : 1050
guide sleeve travel mm Tolerance mm Rated speed rpm	: 9.06 : + 0.25	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : +- 5
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 9.06 : + 0.25 : 325	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : +- 5 rack travel mm : 4.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 9.06 : + 0.25 : 325 : 1.53	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : +- 5
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 9.06 : + 0.25 : 325 : 1.53	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 9.06 : + 0.25 : 325 : 1.53	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : +- 5 rack travel mm : 4.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 9.06 : + 0.25 : 325 : 1.53 : + 0.25	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 9.06 : + 0.25 : 325 : 1.53 : + 0.25	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 9.06 : + 0.25 : 325 : 1.53 : + 0.25	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 9.06 : + 0.25 : 325 : 1.53 : + 0.25 : 898	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	<ul> <li>: 9.06</li> <li>: + 0.25</li> <li>: 325</li> <li>: 1.53</li> <li>: + 0.25</li> <li>: 898</li> <li>: 7.74</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 9.06 : + 0.25 : 325 : 1.53 : + 0.25 : 898	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	<ul> <li>: 9.06</li> <li>: + 0.25</li> <li>: 325</li> <li>: 1.53</li> <li>: + 0.25</li> <li>: 898</li> <li>: 7.74</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	<ul> <li>9.06</li> <li>+ 0.25</li> <li>325</li> <li>1.53</li> <li>+ 0.25</li> <li>898</li> <li>7.74</li> <li>+ 0.25</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	<ul> <li>9.06</li> <li>+ 0.25</li> <li>325</li> <li>1.53</li> <li>+ 0.25</li> <li>898</li> <li>7.74</li> <li>+ 0.25</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	<ul> <li>9.06</li> <li>+ 0.25</li> <li>325</li> <li>1.53</li> <li>+ 0.25</li> <li>898</li> <li>7.74</li> <li>+ 0.25</li> <li>371</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	<ul> <li>9.06</li> <li>+ 0.25</li> <li>325</li> <li>1.53</li> <li>+ 0.25</li> <li>898</li> <li>7.74</li> <li>+ 0.25</li> <li>371</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 9.06 : + 0.25 : 325 : 1.53 : + 0.25 : 898 : 7.74 : + 0.25 : 371 : 2.23	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	<ul> <li>9.06</li> <li>+ 0.25</li> <li>325</li> <li>1.53</li> <li>+ 0.25</li> <li>898</li> <li>7.74</li> <li>+ 0.25</li> <li>371</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	<ul> <li>9.06</li> <li>+ 0.25</li> <li>325</li> <li>1.53</li> <li>+ 0.25</li> <li>898</li> <li>7.74</li> <li>+ 0.25</li> <li>371</li> <li>2.23</li> <li>+ 0.25</li> </ul>	rack travel mm : 13.00 Rated speed rpm : 1050 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300

control lever position degree tolerance degree	: 65.0 : + 6.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 4.60 : + 0.10
Rated speed rpm	: 275
CRT mm min.	: > 5.50
Rated speed rpm	: 425
TORQUE CONTROL	-
Rated speed rpm rack travel mm	: 1000 : 14.05 : +- 0.05
Tolerance mm	
Rated speed rpm rack travel mm	: 14.30
Tolerance mm	: ← 0.10
Rated speed rpm rask travel mm	: 750 : 15.00
Tolerance mm	: 15.00 : + 0.10
Rated speed rpm	: 450 : 13.60
rack travel mm Tolerance mm	: + 0.40
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 750 : 1200
Pressure hPa Rated speed rpm	: - : 750
rack travel mm Tolerance mm	: 8.30 : + 0.05
MEASUREMENT	
Rated speed rpm	: 750
Pressure hPa	: 890
rack travel mm Tolerance mm	: 13.45 : +- 0.20
Pressure hPa	: 455

Tolerance mm : + 0.10  Start interlock  Rated speed rpm : > 100 Rated speed rpm : < 270  Check Speed 1/min : > 80 Check Speed 1/min : < 275  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1200 Rated speed rpm : 575 Del. quantity cm3/1000 strokes : 356.0  Tolerance cm3/1000strokes : + 3.0 Check tolerance cm3/1000strokes : + 6.0 Spreed Tolerance cm3/1000strokes : 8.0 Check tolerance cm3/1000strokes : 12.0  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 30.0	rack travel mm	: 10.05	
Rated speed rpm : > 100 Rated speed rpm : < 270 Check speed 1/min : > 80 Check speed 1/min : < 275  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1200 Rated speed rpm : 575 Del. quantity cm3/1000 strokes : 356.0 Tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000s strokes : 8.0 Check tolerance cm3/1000s. : 12.0  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 30.0		: 10.05 : + 0.10	
## Rated speed rpm : < 270  Check	Start interlock		
## Rated speed rpm : < 270  Check	Rated speed rom	: > 100	
speed 1/min :> 80 Check speed 1/min :< 275  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1200 Rated speed rpm : 575 Del. quantity cm3/1000 strokes : 356.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000 strokes : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : + 6.0 Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Tolerance cm3/1000 strokes : + 2.0 Tolerance cm3/1000 strokes : 10.80 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0		: < 270	
Check speed 1/min : < 275  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1200 Rated speed rpm : 575 Del. quantity cm3/1000 strokes : 356.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000s. : 12.0  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0			
## Speed 1/min : < 275    FUEL DELIVERY CHARACTERISTICS		: > 80	
Aneroid pressure hPa : 1200 Rated speed rpm : 575 Del. quantity cm3/1000 strokes : 356.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000 strokes : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000 strokes : + 30.0		: < 275	
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cm3/1000 strokes       : 356.0         Tolerance       cm3/1000 strokes       : + 3.0         Check tolerance       cm3/1000s       : + 6.0         Spreed       Tolerance       8.0         Check tolerance       : - 8.0         Check tolerance       : - 750         Del. quantity       cm3/1000 strokes       : 155.0         Tolerance       cm3/1000 strokes       : + 2.0         Check tolerance       cm3/1000s       : + 4.0         STARTING FUEL DELIVERY         Rated speed rpm       : 10.80         Tolerance mm       : + 1.00         Del. quantity       cm3/1000 strokes       : 197.0         Tolerance       cm3/1000 strokes       : + 20.0         Check tolerance       cm3/1000 strokes       : + 20.0         Check tolerance       cm3/1000s       : + 30.0		• •••	
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<pre>cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance sm3/1000s. : 12.0  Aneroid pressure hPa</pre>	cm3/1000 strokes	: <del>-</del> 3.0	
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hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0		: 12.0	
Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0	Aneroid pressure		
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<pre>cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0</pre>		: 750	
Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0		A Price - In	
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rack travel mm : 10.80 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0	Rated speed rnm	: 100	
Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0			
Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 30.0			
cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 30.0	Del. quantity		
cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 30.0	cm3/1000 strokes	: 197.0	
Check tolerance cm3/1000s. : +- 30.0		20.0	
cm3/1000s. : + 30.0		: +- <0.0	
		· +- 30.0	
LOW IDLE		50.0	
LOW IDLE			
- <del></del>	LOW IDLE		

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Rated speed rpm Del. quantity	:	325
cm3/1000 strokes	:	47.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s. Spreed	: +-	5.0
Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0